

# **Harvest and Use of Wild Resources in Yakutat, Alaska, 2015**

**by**

**Lauren A. Sill,**

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**and**

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July 2017

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Alaska Department of Fish and Game

Division of Subsistence



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### Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

### Weights and measures (English)

cubic feet per second	ft <sup>3</sup> /s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

### Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

### Physics and chemistry

<i>all atomic symbols</i>	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

### General

Alaska Administrative Code	AAC
all commonly-accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly-accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	\$, ¢
months (tables and figures) first three letters (Jan.,...,Dec)	
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. states	two-letter abbreviations (e.g., AK, WA)

### Measures (fisheries)

fork length	FL
mid-eye-to-fork	MEF
mid-eye-to-tail-fork	METF
standard length	SL
total length	TL

### Mathematics, statistics

<i>all standard mathematical signs, symbols and abbreviations</i>	
alternate hypothesis	H <sub>A</sub>
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, $\chi^2$ , etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	log <sub>2</sub> , etc.
minute (angular)	'
not significant	NS
null hypothesis	H <sub>0</sub>
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	$\alpha$
probability of a type II error (acceptance of the null hypothesis when false)	$\beta$
second (angular)	"
standard deviation	SD
standard error	SE
variance:	
population	Var
sample	var

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# ABSTRACT

This report provides updated information about the harvests and uses of fish, wildlife, and wild plant resources by the community of Yakutat, Alaska. From January through April 2016, eligible households in Yakutat answered questions about their harvest and use of fish, wildlife, and wild plants in 2015. Through these household surveys, researchers: 1) estimated harvests and uses of wild fish, wildlife, and plant resources in a 12-month study period by residents of the study community; 2) mapped areas used for hunting, trapping, fishing, and gathering; 3) collected demographic and income information; and 4) evaluated trends in wild resource harvests. Project researchers also conducted in-depth interviews with select community members and engaged in participant observation activities.

During the 2015 study year, almost all Yakutat households used and harvested wild resources, both for nutrition and to support their way of life. Yakutat residents used a large variety of resources, harvested throughout much of the area around the community, including salmon and other fish, large land mammals, marine mammals, and wild plants and berries, as well marine invertebrates, migratory waterfowl, upland game birds, bird eggs, and small land mammals. The total estimated harvest of wild foods for Yakutat in 2015 was 154,977 usable pounds (262 lb per capita), a decrease from the previous harvest estimate in 2000. Results indicate that the use, harvest, and sharing of wild resources remain important to the community.

Funding for the study was provided through the North Pacific Research Board. The project was conducted collaboratively by research staff of the Division of Subsistence, Alaska Department of Fish and Game, the National Park Service, and residents of Yakutat.

Key words: subsistence hunting, subsistence fishing, wild resources, Yakutat, salmon, nonsalmon fish, marine invertebrates, marine mammals, small land mammals, trapping, furbearers, migratory waterfowl, bird eggs, Situk River, vegetation, demographics, population estimates, employment, income



# 1. INTRODUCTION

This report provides updated information about the harvests of fish, wildlife, and wild plant resources by the community of Yakutat (population of 592). Yakutat is located on the Gulf of Alaska, 225 miles northwest of Juneau (Figure 1-1). This report details the results of a household survey administered in January 2016 for the 2015 study year spanning the 12-month calendar year. Nearly all households used wild resources in 2015. The highest harvested resource category by Yakutat households was salmon, followed by nonsalmon fish and large land mammals. The resource categories with the smallest harvests were small land mammals and birds and eggs. Yakutat households rely on a diverse collection of wild resources, including most species of salmon, many types of nonsalmon fish (e.g., Pacific halibut, eulachon, Pacific herring), large land mammals (e.g., moose, deer, and bears), small land mammals (e.g., marten and snowshoe hare), marine mammals, birds and eggs, a variety of marine invertebrates (e.g., shrimp, crab, octopus), and vegetation (a variety of berries, greens, seaweeds, and firewood). Table 1-1 presents a list, including the Linnaean taxonomic names, of resources used by Yakutat households in 2015.

Harvest information was collected by staff of the Alaska Department of Fish and Game (ADF&G) Division of Subsistence and of the Wrangell-St. Elias National Park and Preserve (WRST) as well as local research assistants (LRAs) in Yakutat. The Division of Subsistence scientifically quantifies harvests of wild resources by Alaska residents to assist the Alaska Board of Fisheries and the Alaska Board of Game in determining the amounts reasonably necessary for subsistence for each game population or fish stock with a positive customary and traditional use finding. Since its inception in 1979, the Division of Subsistence has conducted comprehensive harvest assessment surveys in more than 200 communities in Alaska. The information collected by the Division of Subsistence is also used in resource planning. Understanding the harvests of wild resources by communities throughout Alaska, especially the locations and timing of hunting, fishing, and gathering activities, allows a better assessment of the potential effects of development or regulation changes on local harvesting patterns. In Southeast Alaska, harvest assessment information has been approximately 15–20 years (or more) out of date for all communities, including Yakutat (Table 1-2). Recent survey efforts have focused on updating harvest and use information for Southeast Alaska. In 2013 and 2014, Division of Subsistence researchers updated harvest assessment information for Haines, Hoonah, Angoon, Sitka, Whale Pass, and Hydaburg (Sill and Koster 2017a–b).

## PROJECT BACKGROUND

This project was funded by the North Pacific Research Board (Agreement No. 1519). The goals of the project were to document and understand the harvest and trade of wild foods in Yakutat, as well as to document community responses to contemporary resource harvest challenges arising from climate change, existing resource management systems, and the transportation of people and goods. By documenting these responses, the project sought to explore the resilience and adaptive capacity of the community, and attempted to understand vulnerabilities that may affect Yakutat in the future. By collecting and updating subsistence harvest information for the community of Yakutat, researchers and managers at the local, state, and federal levels will better understand changing patterns of resource harvest and trade in the community, including changes to the spatial extent of harvest areas on local landscapes and seascapes. The information will also be available to the community to support resource management strategies and community conservation efforts, in turn providing increased capacity for the community's long-term sustainability. Including this survey, the ADF&G Division of Subsistence has conducted 4 comprehensive harvest surveys in Yakutat for study years 1984 (Mills and Firman 1986), 1987, and 2000.<sup>1</sup>

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1. Results for the 1987 and 2000 comprehensive subsistence harvest and use surveys are available online; see the ADF&G Community Subsistence Information System (CSIS): <http://www.adfg.alaska.gov/sb/CSIS> (hereinafter cited as CSIS).

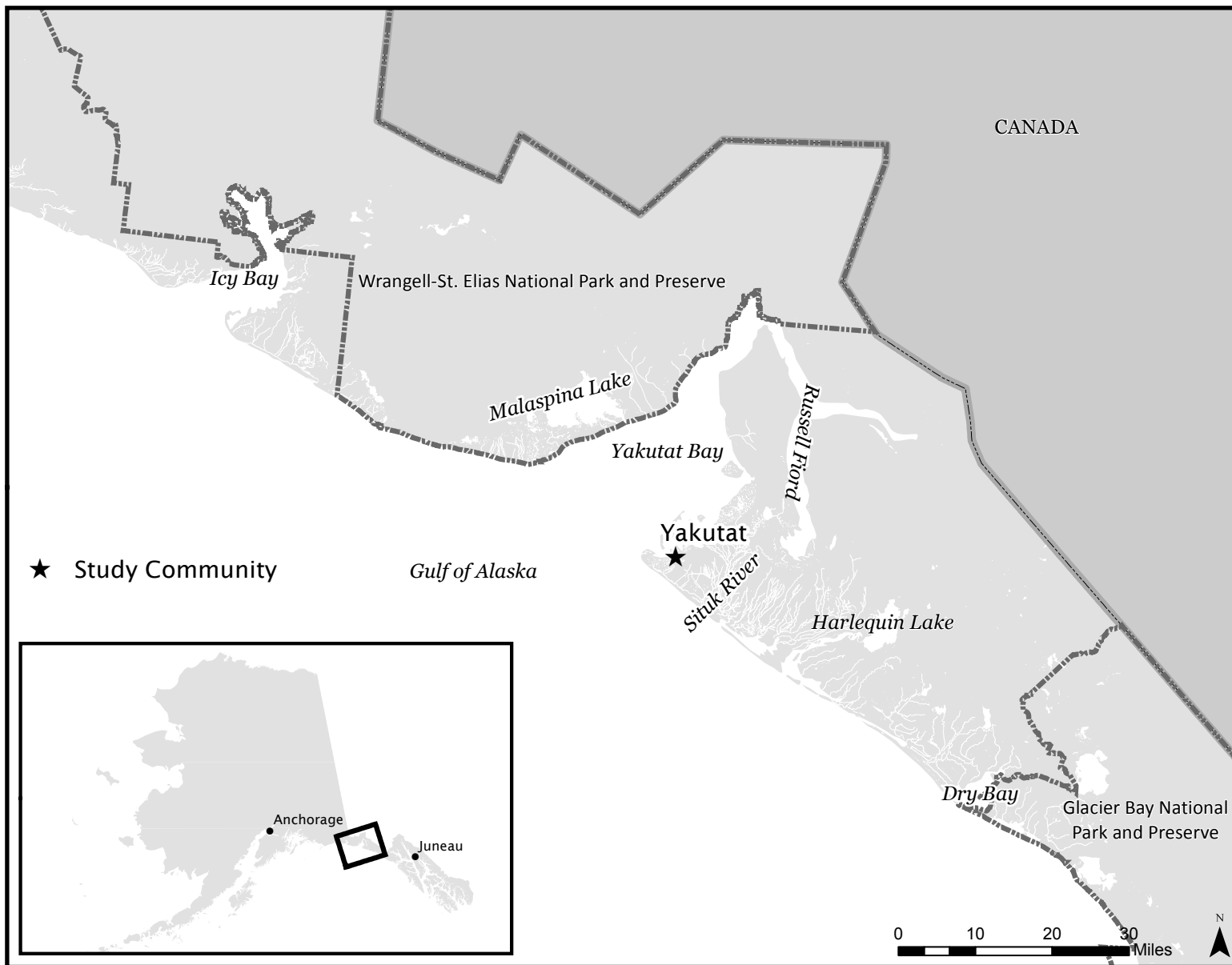


Figure 1-1.—Map of study community area, Yakutat, 2015.

Table 1-1.—Species used by study community households, Yakutat, 2015.

Resource	Scientific name
Chum salmon	<i>Oncorhynchus keta</i>
Coho salmon	<i>Oncorhynchus kisutch</i>
Chinook salmon	<i>Oncorhynchus tshawytscha</i>
Pink salmon	<i>Oncorhynchus gorbuscha</i>
Sockeye salmon	<i>Oncorhynchus nerka</i>
Unknown salmon	<i>Oncorhynchus spp.</i>
Pacific herring	<i>Clupea pallasi</i>
Pacific herring roe/unspecified	<i>Clupea pallasi</i>
Pacific herring spawn on kelp	<i>Clupea pallasi</i>
Pacific herring roe on hair seaweed	<i>Clupea pallasi</i>
Pacific herring roe on hemlock branches	<i>Clupea pallasi</i>
Eulachon (hooligan, candlefish)	<i>Thaleichthys pacificus</i>
Pacific (gray) cod	<i>Gadus macrocephalus</i>
Unknown flounder	
Lingcod	<i>Ophiodon elongatus</i>
Rock greenling	<i>Hexagrammos lagocephalus</i>
Pacific halibut	<i>Hippoglossus stenolepis</i>
Black rockfish	<i>Sebastes melanops</i>
Yelloweye rockfish	<i>Sebastes ruberrimus</i>
Dusky rockfish	<i>Sebastes ciliatus</i>
Copper rockfish	<i>Sebastes caurinus</i>
China rockfish	<i>Sebastes nebulosus</i>
Unknown rockfish	
Sablefish (black cod)	<i>Anoplopoma fimbria</i>
Unknown sculpin	
Dolly Varden—unknown	<i>Salvelinus malma</i>
Cutthroat trout	<i>Oncorhynchus clarkii</i>
Rainbow trout	<i>Oncorhynchus mykiss</i>
Steelhead	<i>Oncorhynchus mykiss</i>
Bison	<i>Bison bison</i>
Black bear	<i>Ursus americanus</i>
Brown bear	<i>Ursus arctos</i>
Caribou	<i>Rangifer tarandus</i>
Deer	<i>Odocoileus hemionus</i>
Mountain goat	<i>Oreamnos americanus</i>
Moose	<i>Alces alces</i>
Beaver	<i>Castor canadensis</i>
Coyote	<i>Canis latrans</i>
Snowshoe hare	<i>Lepus americanus</i>
North American river (land) otter	<i>Lontra canadensis</i>
Lynx	<i>Lynx canadensis</i>
Marten	<i>Martes spp.</i>
Mink	<i>Neovison vison</i>
Red (tree) squirrel	<i>Tamiasciurus hudsonicus</i>
Weasel	<i>Mustela</i>
Gray wolf	<i>Canis lupus</i>

-continued-

Table 1-1.–Page 2 of 3.

Resource	Scientific name
Wolverine	<i>Gulo gulo</i>
Fur seal	<i>Callorhinus ursinus</i>
Harbor seal	<i>Phoca vitulina</i>
Unknown seal oil	
Sea otter	<i>Enhydra lutris</i>
Unknown whale	
Canvasback	<i>Aythya valisineria</i>
Unknown goldeneye	<i>Bucephala spp.</i>
Mallard	<i>Anas platyrhynchos</i>
Northern pintail	<i>Anas acuta</i>
Unknown scaup	<i>Aythya spp.</i>
Unknown teal	<i>Anas spp.</i>
Unknown wigeon	<i>Anas spp.</i>
Unknown ducks	
Dusky Canada goose	<i>Branta canadensis occidentalis</i>
Unknown Canada/cackling geese	<i>Branta spp.</i>
Snow goose	<i>Chen caerulescens</i>
White-fronted goose	<i>Anser albifrons</i>
Unknown geese	
Sandhill crane	<i>Grus canadensis</i>
Common snipe	<i>Gallinago gallinago</i>
Unknown shorebirds	
Unknown ptarmigan	<i>Lagopus spp.</i>
Unknown other birds	
Glaucous-winged gull eggs	<i>Larus glaucescens</i>
Unknown gull eggs	
Unknown tern eggs	
Unknown eggs	
Black (small) chitons	<i>Katharina tunicata</i>
Butter clams	<i>Saxidomus gigantea</i>
Horse clams	<i>Simomactra planulata</i>
Pacific littleneck clams (steamers)	<i>Protothaca staminea</i>
Razor clams	<i>Siliqua spp.</i>
Unknown clams	
Unknown cockles	
Dungeness crab	<i>Cancer magister</i>
Tanner crab	<i>Chionoecetes spp.</i>
Unknown crab	
Mussels	<i>Mytilus spp.</i>
Octopus	<i>Octopus vulgaris</i>
Sea cucumber	
Green sea urchin	<i>Parastichopus californicus</i>
Unknown sea urchin	
Shrimp	
Blueberry	<i>Vaccinium uliginosum alpinum</i>
Lowbush cranberry	<i>Vaccinium vitis-idaea minus</i>
Highbush cranberry	<i>Viburnum edule</i>

-continued-

Table 1-1.–Page 3 of 3.

Resource	Scientific name
Elderberry	<i>Sambucus racemosa</i>
Currants	<i>Ribes spp.</i>
Huckleberry	<i>Vaccinium parvifolium</i>
Nagoonberry	<i>Rubus arcticus spp.</i>
Raspberry	<i>Rubus idaeus</i>
Salmonberry	<i>Rubus spectabilis</i>
Soapberry	<i>Shepherdia canadensis</i>
Strawberry	<i>Fragaria virginiana</i>
Twisted stalk berry (watermelon berry)	<i>Streptopus amplexifolius</i>
Other wild berry	
Beach asparagus	<i>Salicornia virginica</i>
Goose tongue	<i>Plantago maritima</i>
Wild rhubarb	<i>Polygonum alaskanum</i>
Devil's club	<i>Echinopanax horridum</i>
Fiddlehead ferns	
Hudson's Bay (Labrador) tea	<i>Ledum palustre</i>
Indian rice	<i>Fritillaria camschatcensis</i>
Salmonberry shoots	<i>Rubus spectabilis</i>
Skunk cabbage	<i>Lysichiton americanum</i>
Spruce tips	<i>Picea spp.</i>
Wild celery	<i>Angelica lucida</i>
Yarrow	<i>Achillea spp.</i>
Other wild greens	
Unknown mushrooms	
Fireweed	<i>Epilobium angustifolium</i>
Chaga	<i>Inonotus I. obliquus</i>
Wild chives	<i>Allium schoenoprasum</i>
Black seaweed	<i>Porphyra abbottae</i>
Bull kelp	<i>Nereocystis luetkeana</i>
Red seaweed	<i>Palmaria hecatensis</i>
Sea ribbons	<i>Palmaria hecatensis</i>
Giant kelp	<i>Macrocystis pyrifera</i>
Alaria	<i>Alaria marginata</i>
Bladder wrack	<i>Fucus vesiculosus</i>
Unknown seaweed	
Wood	
Cottonwood	<i>Populus spp.</i>

Source ADF&G Division of Subsistence household surveys, 2016.

Table 1-2.—Previous study years, Southeast Alaska communities, 1983–2015.

Community	Estimated number of households	1983	1984	1985	1987	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2012	2013	2015
Angoon	167		ALL		ALL	MM	ALL	MM	MM		MM	MM	MM	MM	MM	MM	MM	MM	MM	ALL		
Coffman Cove	89				ALL				ALL													
Craig	470				ALL	MM	MM	ALL	MM		MM	MM	MM	MM	MM	MM	MM	MM		MM		
Edna Bay	18				ALL				ALL													
Elfin Cove	13				ALL																	
Game Creek CDP	7						ALL															
Gustavus	212				ALL																	
Haines <sup>b</sup>	782	ALL			ALL	MM	ALL	MM	MM		MM	MM	MM	MM	MM	MM	MM	MM	MM	ALL		
Hollis	44				ALL				ALL													
Hoonah	305			ALL	ALL	MM	ALL	MM	MM		MM	MM	MM	MM	MM	MM	MM	MM	MM	ALL		
Hydaburg	128				ALL	MM	MM	ALL	MM		MM	MM	MM	MM	MM	MM	MM	MM		ALL		
Hyder	48				ALL																	
Kake	213			ALL	ALL	MM	ALL	MM	MM		MM	MM	MM	MM	MM	MM	MM	MM	MM	MM		
Kasaan	23				ALL				ALL													
Klawock	297		ALL		ALL	MM	MM	ALL	MM	D	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM		
Klukwan	41	ALL			ALL	MM	ALL	MM	MM		MM	MM	MM	MM	MM	MM	MM	MM		MM		
Metlakatla	493				ALL																	
Meyers Chuck <sup>c</sup>					ALL																	
Naukatu Bay	49								ALL													
Pelican	41				ALL	MM	MM	MM	MM		MM	MM	MM	MM	MM	MM	MM	MM	MM	MM		
Petersburg	1,252				ALL	MM	MM	MM	MM		ALL	MM	MM	MM	MM	MM	MM	MM	MM	MM		
Point Baker	8				ALL		ALL															
Port Alexander	22				ALL																	
Port Protection	26				ALL		ALL															
Saxman	120				ALL	MM	MM	MM	MM	ALL	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM		
Sitka	3,545				ALL	MM	ALL	MM	MM		MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	ALL	
Skagway	410				ALL																	
Tenakee Springs	72		ALL		ALL																	
Thorne Bay	214				ALL				ALL													
Whale Pass	20				ALL				ALL											ALL		
Whitestone Logging Camp	8						ALL															
Wrangell	1,053				ALL	MM	MM	MM	MM		ALL	MM	MM	MM	MM	MM	MM	MM		MM		
Yakutat	270		ALL		ALL	MM	MM	MM	MM		ALL	MM	MM	MM	MM	MM	MM	MM	MM	MM		ALL

Note The key for the table is:

ALL = "comprehensive" baseline survey of all resources used for subsistence purposes; MM = marine mammals survey; and D = deer survey.

a. Source U.S. Census Bureau (2011).

b. In 2012, "Haines" included the city of Haines and the census designated place (CDP) of Mud Bay. The comprehensive harvest surveys for 1983 and 1996 included the city of Haines, Mud Bay CDP, Covenant Life CDP, Lutak CDP, Mosquito Lake CDP, and the remainder of the Haines Borough along the road system. The 1987 comprehensive harvest survey included the city of Haines and perhaps some limited adjacent areas, but not the entire road system population.

c. Meyers Chuck became part of the City and Borough of Wrangell in 2008 and is no longer its own census designated place (CDP); therefore, there are no census data for this community in 2010.

Yakutat is one of 23 resident zone communities of Wrangell-St. Elias National Park. These resident zone communities are eligible to engage in subsistence uses in the national park in recognition of their customary and traditional uses of park lands.<sup>2</sup> Under federal regulations, Yakutat residents are also able to hunt and trap in Glacier Bay and Wrangell-St. Elias National preserves.<sup>3, 4</sup> Since both ADF&G and the National Park Service (NPS) are interested in the subsistence harvesting patterns of Yakutat residents, staff from both organizations collaborated on administering the surveys, conducting key respondent interviews, and analyzing the data.

## REGULATORY CONTEXT

Under the Alaska state constitution, any resident of the state is eligible to participate in subsistence hunting and fishing in the Yakutat area, which, for fishing, includes state-managed District 16 waters, and, for hunting, is Game Management Unit (GMU) 5 (state and federal designation). Through the Alaska National Interest Lands Conservation Act (ANILCA, PL 96-487), the federal government created a priority for rural residents to participate in subsistence hunting, trapping, and fishing opportunities on federal public lands. In Southeast Alaska, this management overlay can create a confusing regulatory structure because of the large amount of land and water subject to federal management. There are 2 state nonsubsistence areas in Southeast Alaska (Figure 1-2); one located around the community of Juneau (5 AAC 99.015(2)) and one around the community of Ketchikan (5 AAC 99.015(1)). Within these nonsubsistence areas, no subsistence fisheries or hunts can be authorized by the state's regulatory boards. Outside of the nonsubsistence areas, state subsistence fisheries are authorized where the Alaska Board of Fisheries (BOF) has made positive customary and traditional (C&T) use findings.<sup>5</sup> Where no such findings exist, personal use fisheries may be authorized. Yakutat is not located within the nonsubsistence areas.

In the Yakutat Area, a state subsistence permit is required for subsistence harvests of salmon, trout, and Arctic char; steelhead trout subsistence permits may be issued for the Situk and Ahrnklin rivers only (5 AAC 01.680). Federal regulations, which require a permit for the same species, apply on inland waters within or adjacent to the Wrangell-St. Elias National Park and Preserve, Tongass National Forest, and Glacier Bay National Preserve (Glacier Bay National Park is closed to subsistence fishing and hunting), and exclude marine waters.<sup>6</sup> Pacific halibut may be taken for subsistence uses only under federal subsistence regulations by residents of eligible rural communities and members of eligible tribes; Yakutat is eligible under both of these criteria.<sup>7</sup>

The majority of fish taken by Yakutat residents for use in the home are harvested under a state subsistence salmon permit. The state subsistence permit in 2015 provided for a weekly subsistence fishing period from 6:00 a.m. Friday to 6:00 p.m. Saturday during the commercial salmon net season; before and after the

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2. Wrangell-St. Elias National Park and Preserve. n.d. "Subsistence Eligibility." U.S. Department of the Interior, National Park Service. <https://www.nps.gov/wrst/learn/management/subsistence-eligibility.htm> (accessed April 2017).
  3. Glacier Bay National Park and Preserve. 2015. "Hunting in Glacier Bay National Preserve." U.S. Department of the Interior, National Park Service. <https://www.nps.gov/glba/planyourvisit/hunting.htm> (accessed June 2017).
  4. Wrangell-St. Elias National Park and Preserve. n.d. "Subsistence Eligibility." U.S. Department of the Interior, National Park Service. <https://www.nps.gov/wrst/learn/management/subsistence-eligibility.htm> (accessed April 2017).
  5. In the Yakutat area, the state Board of Fisheries has made positive C&T findings for various fish stocks (5 AAC 01.666). There are positive C&T findings for salmon, Dolly Varden char, steelhead trout, and smelt in fresh waters upstream from the terminus of streams and rivers of the Yakutat Area from the Doame River to the Tsiu River (to Point Manby for the nonsalmon fish species), in the waters of Yakutat Bay and Russell Fiord, and, for salmon only, in the waters of Icy Bay. There are positive C&T findings for herring, herring spawn, halibut, and bottomfish in the waters of Yakutat Bay, including Russell Fiord.
  6. *Code of Federal Regulations*, Subsistence Management Regulations for Public Lands in Alaska, title 36, sec. 242.27.e.12.ii; sec. 242.3.c.9, 25, and 27; and sec. 242.3.a (2017).
  7. *Code of Federal Regulations*, Wildlife and Fisheries, title 50, sec. 300.65.g.1 and 2 (2017).



commercial season, regulations state that subsistence fishing is open. No possession or annual limits were specified on the permit. Fishers had to attend their nets at all times when fishing in the Situk River and at least once per day when fishing in Yakutat Bay (Figure 1-3). In 2015, an emergency order was released for the Yakutat Area that closed subsistence fishing for Chinook salmon in the Situk-Ahrnklin Inlet on May 10.<sup>8</sup> Chinook salmon also could not be retained in the sockeye salmon subsistence fishery. The 2015 preseason forecast for the Chinook salmon return was below desired levels and conservation actions were in order to ensure adequate levels of escapement. Some fish are also harvested with a federal subsistence salmon permit that provides for additional gear types (rod and reel) and days of fishing (Figure 1-4). Subsistence Pacific halibut regulations allow for skates (longlines) of up to 30 hooks and 20 halibut per day per person.<sup>9</sup> In addition, fish are taken for home use under state sport and commercial regulations.

The majority of the land used for hunting by Yakutat residents is federally managed, either by the NPS or the U.S. Forest Service; however, a small area just outside of town that is heavily used by Yakutat residents is under state, private, or Alaska Native corporation ownership, which is open to hunting only under state regulations. Whether federal or state regulations apply depends on where the hunters are hunting and whether they are federally qualified rural residents. In GMU 5, Yakutat residents can hunt under both state and federal subsistence regulations in Wrangell-St. Elias National Preserve, Glacier Bay National Preserve, and Tongass National Forest<sup>10</sup>; however, hunting in Wrangell-St. Elias National Park can only take place under federal subsistence regulations, and eligibility is limited to people residing in one of the park's resident zone communities (which include Yakutat). Under state regulations, harvest tickets are required for black bear and deer; mountain goat, moose, and brown bear hunts are all registration hunts requiring a registration permit (5 AAC 85). Under federal regulations, state harvest tickets are required for black bear and deer; a federal registration permit is required for brown bear and mountain goat; and federal moose hunts require a state registration permit for Nunatak Bench and GMU 5B and a joint state/federal registration permit for GMU 5A except Nunatak Bench (Federal Subsistence Management Program n.d.). Both moose and deer are relative newcomers to the Yakutat area. Moose migrated down the Alsek River corridor from Canada in the early 1900s and deer were introduced to Yakutat in the 1940s. The moose population has become well-established throughout GMU 5, supporting a harvest of 45 animals per year on average (Harper and McCarthy 2014),<sup>11</sup> with a harvest limit of 1 bull in most locations. Deer have populated the islands around Yakutat, with occasional sightings on the mainland. A much smaller and more fragile population, the hunting season for deer is of short duration (1 month) and is limited to 1 buck. Other hunting and trapping opportunities provided for under state or federal regulations in GMU 5 include coyote, fox, hare, lynx, wolf, wolverine, grouse, ptarmigan, and waterfowl. Federal regulations provide for the harvest of harbor seals and sea otters by Alaska Natives through an exemption in the Marine Mammal Protection Act. Yakutat residents can also legally harvest seagull eggs under provisions of the Migratory Bird Treaty Act.<sup>12</sup>

For this report, when discussing harvest patterns, authors refer to fisheries and hunts as they exist within the regulatory context. However, while conducting surveys and key respondent interviews, some residents referred to their harvesting patterns, regardless of the hunt or fishery, as subsistence. Some residents characterized their participation in harvest ticket deer hunts or rod and reel sport fisheries, for example, as subsistence, and these comments have been incorporated into the discussion.

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8. Alaska Department of Fish and Game. May 7, 2015. "Yakutat Subsistence Announcement." <http://www.adfg.alaska.gov/static/applications/DCFnewsrelease/529833294.pdf> (accessed April 2017).

9. *Code of Federal Regulations*, Wildlife and Fisheries, title 50, sec. 300.65.h.1.i and sec. 300.65.h.2 (2017).

10. *Code of Federal Regulations*, Parks, Forests, and Public Property, title 36, sec. 242.25 and sec. 242.26 (2017.)

11. Data for Unit 5 moose harvests for 2014 and 2015 were gathered from the Alaska Department of Fish and Game Harvest Lookup database: [https://secure.wildlife.alaska.gov/index.cfm?fuseaction=harvest.lookup&\\_ga=2.8658677.1719120545.1497471168-146521669.1497471168](https://secure.wildlife.alaska.gov/index.cfm?fuseaction=harvest.lookup&_ga=2.8658677.1719120545.1497471168-146521669.1497471168) (accessed June 2017).

12. Note that regulations are subject to updates, which are reflected in the Code of Federal Regulations (50 CFR Part 92) and the Federal Register. For details about the federal bird and bird egg subsistence opportunities during the study year, see Federal Register 80, no. 35 (February 23, 2015): 9392–9398: <https://www.fws.gov/alaska/ambcc/Regs/AK%20MB%20Subsistence%20-%202015%20-%20final.pdf> (accessed May 2017).



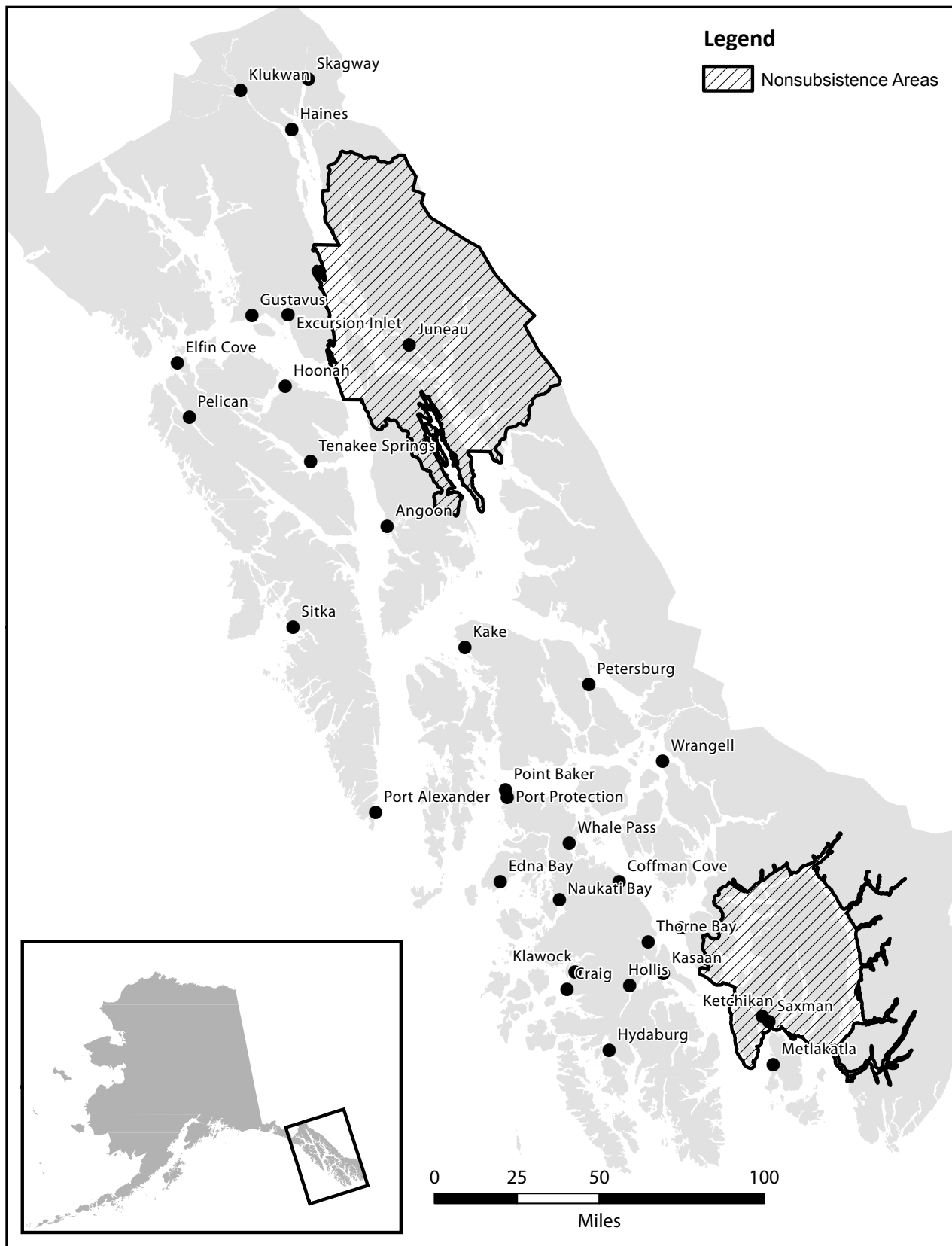


Figure 1-2.—Map of Southeast Alaska nonsubsistence areas.

<b>ALASKA DEPARTMENT OF FISH AND GAME</b> <b>State Subsistence Salmon Permit</b> <b>Yakutat Management Area - Phone: 784-3255</b>	
Name: _____ DOB: _____ Mailing Address: _____ Physical Address: _____ City/State/ZIP Code: _____ Telephone #: _____ # of Persons in Household: _____ Community of Principal Residence: _____ Email: _____	<input type="checkbox"/> Duplicate Permit      Permit Year 20 _____
<b>Alaska Residency</b> (Actual number of years and months as a resident is required) _____ Years _____ Months Determination of Residency (AS 16.05.415.); a "resident" means, a person who is physically present in Alaska with the intent to remain indefinitely and make a home here, has maintained that person's domicile in Alaska for the 12 consecutive months immediately preceding this application for a permit, and is not claiming residency or obtaining benefits under a claim of residency in another state, territory, or country.	
Other Members in household authorized to fish this permit: Name: _____ Name: _____ Name: _____	
Proxy: Authorized Alternate Person Fishing if permit holder is blind, has physical disabilities, or is 65 years of age or older as per 5 AAC 01.011 (g) (1) (A). Name: _____ Phone #: _____ Mailing Address: _____ City/State/ZIP Code: _____	
<div style="border: 1px solid black; padding: 5px; min-height: 40px;">             Any departure from the permit conditions and guidelines may only be done with permission from the Area Management Biologists in the Yakutat ADF&amp;G office.               Other as Specified: _____              Authorized By: _____           </div>	
<p style="font-size: small;">I understand that State of Alaska regulations are in effect, and I agree to abide by the permit conditions, harvest limits, seasons and to record daily harvests. I certify under penalty of perjury that to the best of my knowledge and belief the information I have provided on this permit application is true and correct. I understand that failing to comply with reporting requirements makes me ineligible to receive a permit during the following calendar year. (Note: Making a false statement, or omitting a material fact, is subject to a maximum penalty of \$10,000 or 1 year imprisonment, or both, per AS11.56.210.)</p>	
_____ <i>Permittee Signature (not valid until signed)</i>	_____ <i>Date</i>
_____ <i>Department Representative (not valid until signed)</i>	_____ <i>Date of Issue</i>
<b>General Permit Conditions</b> <ol style="list-style-type: none"> <li>Only one permit may be issued per household.</li> <li>Permit holders and other members in household authorized to fish this permit <b>must be Alaska residents</b> (5 AAC 01.010. (b)).</li> <li>The permit holder, authorized member of household, or authorized proxy must be present at time of harvest and must retain this permit in possession when fishing (5 AAC 01.015 (3)).</li> <li>Legal types of gear for subsistence fishing in the Yakutat Management Area include: set gillnet, drift gillnet, beach seine, purse seine, hand purse seine, dip net, cast net, spear, handline, longline, power gurdy troll gear, and hand troll gear. (5 ACC 39.105.)</li> <li>Gillnets used for subsistence fishing may not exceed 50 fathoms in length and meshes shall be substantially equal (30 filaments)(5 AAC 01.010 (c) (1A).</li> <li><b>Dorsal fins of subsistence salmon must be removed immediately after harvest (5 ACC 01.690.)</b></li> <li>The permittee shall record harvests in numbers of fish for each day fished by species, gear type, and location directly on the harvest calendar on this permit, and before leaving the immediate vicinity where the harvest took place, even if no fish were harvested. (The immediate fishing area is defined as 100 feet from the area the fish were harvested.)</li> <li><b>New—This permit must be returned annually to ADF&amp;G by November 10 in the year this permit was issued—even if you did not fish.</b></li> </ol>	
<b>Specific Permit Conditions</b> <ol style="list-style-type: none"> <li>Permit is valid only in the freshwaters upstream from the terminus of streams and rivers in the Yakutat area from the Doame River to the Tsiu River, and in the waters of Yakutat Bay and Icy Bay.</li> <li>Unless extended by the commissioner, by emergency order, from the beginning of the commercial salmon net season through the end of the commercial salmon net season, the <b>weekly subsistence fishing period is from 6:00 a.m. Friday to 6:00 p.m. Saturday.</b> This applies to each river or by fishery individually.</li> <li>In the Situk River each subsistence permit holder shall attend their net at all times when it is being used to take salmon. In Yakutat Bay each permit holder shall attend their net at least once per day.</li> <li>A permittee who fails to comply with reporting requirements is ineligible to receive a subsistence permit the following calendar year, unless failure to report was due to loss in the mail, accident, sickness or other unavoidable circumstances (5 AAC 01.015 (c)).</li> </ol>	
<p style="font-size: small;"><i>This Permit <b>MUST</b> Be Returned to Alaska Department of Fish and Game Office by <b>November 10, following the year in which the permit was issued regardless of whether you fished or not.</b></i></p>	
<b>Mark this box if you did not fish</b> <input type="checkbox"/>	

Figure 1-3.—State subsistence salmon permit, Yakutat Management Area.



### Conditions of the Permit

FOR STREAMS THAT CROSS THE KETCHIKAN OR JUNEAU ROAD SYSTEMS, THE SUBSISTENCE FISHING RULES FOR TROUT ARE THE SAME AS STATE SPORT FISHING RULES, EXCEPT THE MIN. SIZE FOR TROUT IS 11". THE MIN. SIZE FOR STEELHEAD IS 32" AND GEAR IS RESTRICTED TO ROD AND REEL WITHOUT BAIT.

In accordance with the Privacy Act (5 U.S.C. 552a) and the Paperwork Reduction Act (44 U.S.C. 3601), please note the following information. This information collection is authorized by the Alaska National Interest Lands Conservation Act and associated regulations. The Federal Subsistence Board will use this information to manage fish and wildlife resources for subsistence uses. It is our policy not to use your name for any other purpose. We will maintain this information in accordance with the Privacy Act. Your response is voluntary, but is required to obtain or retain a benefit. We may not conduct or sponsor and you are not required to respond to an information collection unless it displays a currently valid OMB control number. OMB has approved this information collection and assigned OMB Control No. 1018-0075. We estimate it will take you about 15 minutes to complete the application and record your name. This burden estimate includes time for reviewing instructions, gathering data, and completing and reviewing the form. You may direct comments regarding the burden estimate or any other aspect of the form to the Information Collection Clearance Officer, Division of Policy, Performance, and Management Programs, U.S. Fish and Wildlife Service, 5275 Leesburg Pike, Falls Church, VA 22041-3803.

U.S. Fish and Wildlife Service  
Office of Subsistence Management  
1011 E. Tudor Rd. M/S 121  
Anchorage, AK 99503-6199

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE \$300

### BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 12874 ANCHORAGE, AK

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US FISH AND WILDLIFE SERVICE c/o  
Craig Ranger District  
PO Box 500  
Craig, AK 99921-9988

NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

### Conditions of the Permit

FOR STREAMS THAT CROSS THE KETCHIKAN OR JUNEAU ROAD SYSTEMS, THE SUBSISTENCE FISHING RULES FOR TROUT ARE THE SAME AS STATE SPORT FISHING RULES, EXCEPT THE MIN. SIZE FOR TROUT IS 11". THE MIN. SIZE FOR STEELHEAD IS 32" AND GEAR IS RESTRICTED TO ROD AND REEL WITHOUT BAIT.

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Figure 1-4.—Page 2 of 2.

## STUDY OBJECTIVES

The project had the following objectives:

- Objective 1 – Describe current (study year 2015) harvests of wild foods by residents of Yakutat as well as the demographic and economic factors that influence the ability of people to engage in harvest activities.
- Objective 2 – Document spatial information about the community’s resource harvest and use areas over time; and document catalysts for change (both anthropomorphic and naturally occurring).
- Objective 3 – Document local residents’ harvesting strategies and how their harvest methods may have changed over time due to changes in the local social-ecological system.
- Objective 4 – Analyze resilience and adaptive capacity of the community of Yakutat as measured through subsistence harvests and uses.

## RESEARCH METHODS

### Ethical Principles for the Conduct of Research

The project was guided by the research principles outlined in the *Alaska Federation of Natives Guidelines for Research*<sup>13</sup> and by the National Science Foundation, Office of Polar Programs in its *Principles for the Conduct of Research in the Arctic*<sup>14</sup>, the *Ethical Principles for the Conduct of Research in the North* (Association of Canadian Universities for Northern Studies 2003), as well as the Alaska confidentiality statute (AS 16.05.815). These principles stress community approval of research designs, informed consent, anonymity or confidentiality of study participants, community review of draft study findings, and the provision of study findings to each study community upon completion of the research.

### Project Planning and Approvals

In October 2014, the North Pacific Research Board released a Request for Proposals (RFP). Subsistence Research Specialists Malla Kukkonen, Joshua Ream, and Lauren Sill met to discuss crafting a project addressing the information needs contained within the RFP. In November, Ream approached the Yakutat Tlingit Tribe (YTT) to gauge interest in the project under consideration. After receiving voiced support for Yakutat’s inclusion in the process, project design proceeded and a letter of support was received from YTT (Appendix A). In late November 2014, Kukkonen approached WRST Cultural Anthropologist and Subsistence Specialist Barbara Cellarius for a review of the proposed project as well as to gauge her interest in involvement in the project. Cellarius was able to join the project as a collaborator (Table 1-3).

ADF&G and NPS staff reviewed results of previous harvest surveys and ethnographic work that had been conducted in Yakutat. Ream, Kukkonen, and Sill conducted several key respondent interviews with knowledgeable individuals from Yakutat, either in person or over the phone, to discuss subsistence and fishing and hunting activities in Yakutat now and in the past. Based on these results, a draft survey was created. The survey underwent review by all project principals with ADF&G and NPS, the division’s statewide research director, and the division’s data management team (Garrett Zimpelman, Marylynn Kostick, Megan Hellenthal), as well as YTT.

Ream, Kukkonen, Sill, and Cellarius held a scoping meeting at the YTT tribal council meeting on December 16, 2015, and at the borough assembly meeting on January 21, 2016 (Table 1-4). The tribal council meeting occurred in the conference room of the tribal offices and was open to the general public. Approximately 15 people attended the meeting. Comments received after the presentation concerned the smaller size of

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13. Alaska Federation of Natives. 2013. “Alaska Federation of Natives Guidelines for Research.” Alaska Native Knowledge Network. <http://www.ankn.uaf.edu/IKS/afnguide.html> (accessed April 2017).

14. National Science Foundation Interagency Social Science Task Force. 2012. “Principles for the Conduct of Research in the Arctic.” <http://www.nsf.gov/od/opp/arctic/conduct.jsp> (accessed April 2017).

Table 1-3.—Project staff.

Task	Name	Organization
Project design and management	Lauren A. Sill, Malla Kukkonen, and Joshua T. Ream	ADF&G Division of Subsistence
Principal investigator	Lauren A. Sill	ADF&G Division of Subsistence
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	Malla Kukkonen	ADF&G Division of Subsistence
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	Charlotte Demmert	Yakutat
	Lorena Williams	Yakutat
	Ray Sensmeier	Yakutat
	Adam Williams	Yakutat
	Ralph Johnson	Yakutat
	Joe Valle	Yakutat

Table 1-4.—Community scoping meetings, Yakutat, 2015–2016.

Community	Date	Attendance	
		Community residents	Staff
Yakutat–tribal council meeting	12/16/2015	15	4 <sup>a</sup>
Yakutat– city and borough assembly meeting	1/21/2016	15	4

a. National Park Service representative attended via teleconference participation.

sockeye salmon, competition with charter fishermen to harvest halibut, and concerns about the community being hurt by sharing their information on this survey. Some of these comments were incorporated into the survey instrument or key respondent protocol; the concerns about negative effects of the survey were addressed directly. After the presentation, a discussion was held with council members about the best time to conduct the surveys. Researchers presented the project overview at a regular City and Borough of Yakutat meeting in the high school auditorium directly prior to the start of the survey effort. Approximately 15 people attended this public presentation. Questions and comments during this meeting included a question about the changes in harvesting areas documented during the past 2 surveys and benefits or risks to households choosing to participate in the survey. Comments were addressed similarly to those from the tribal council meeting.

## **Systematic Household Surveys**

The primary method for collecting subsistence harvest and use information in this project was a systematic household survey administered to eligible resident households. Following receipt of comments at the scoping meetings, ADF&G finalized the survey instrument in January 2016. A key goal was to structure the survey instrument to collect demographic, resource harvest and use, and other economic data that are comparable with information collected in other household surveys in Alaska study communities, including previous surveys in Yakutat, and with data in the Community Subsistence Information System (CSIS<sup>15</sup>). Additionally, questions were developed that would inform the study objectives concerning resilience and adaptation of the community. Some of these questions were developed using a cultural consensus analysis approach (CCA), which is a tool used to identify shared beliefs and behaviors within or among groups. The CCA approach was used in this study to understand community perceptions of local topics in fish and wildlife management and environmental change. Appendix B is an example of the survey instrument used in this project.

To create a household list encompassing all residential structures in Yakutat, the boundaries of the Yakutat census designated place (CDP) were used, in keeping with past survey administration. ADF&G researcher Ream created a list of all structures within Yakutat CDP through a multi-step process based on recent building and parcel geographic information system (GIS) layers available through ArcGIS Online<sup>16</sup> as well as aerial photographs and satellite imagery. The list was partially groundtruthed during the community scoping meeting trip to verify structures in several areas of town with poor or confusing coverage on the imagery or GIS layers. Through conversations with the City Planner and a long-time local resident, the status of structures not accessible by road were determined and one watercraft liveaboard and one private floathouse were documented.

A total of 401 structures were identified. From this list, staff with the division's Information Management section drew an initial random sample of 125 structures; when that list was exhausted, 5 more structures were added to the list. Structures were dispositioned as surveyed, no contact, moved, vacant, or non-resident (meaning the household did not meet the eligibility requirements set for this survey of 6 months residency in Yakutat during the study year). This was repeated until the sample target was achieved. For every household that was selected for a survey, staff contacted the household and a survey was attempted on at least 3 occasions. If a reasonable effort was made to contact the household at least 3 times—on different days and at different times—with no success, then the household was coded a “no contact” and staff attempted to contact the next household on the list. The surveys were usually conducted in teams—1 LRA and 1 staff member, but occasionally 2 staff members went out together or a survey was conducted by an LRA or a staff member on his or her own. At the beginning of the survey effort, researchers and LRAs reviewed the maps of numbered structures and updated occupancy status or inhabitants' names. During the survey, a number of structures were identified as non-residential buildings or as vacant. Combined with households that

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15. ADF&G Community Subsistence Information System: <http://www.adfg.alaska.gov/sb/CSIS/> (hereinafter cited as CSIS).

16. Product names are given because they are established standards for the State of Alaska or for scientific completeness; they do not constitute product endorsement.



had moved or were not residents of the community, a final revised estimate of 240 households was made. Researchers attempted to survey a random sample of 40% of these households and successfully interviewed 42% (Table 1-5). On average, surveys lasted 67 minutes, ranging from 20 minutes to 4.5 hours (Table 1-6).

### **Mapping Locations of Subsistence Hunting, Fishing, and Gathering Activities**

During household interviews, the researchers asked respondents to indicate the locations of their fishing, hunting, and gathering activities during the study year. In addition, interviewers asked the respondents to mark on the maps the sites of each harvest, the species harvested, the amounts harvested, and the months of harvest. ADF&G staff established a standard mapping method. Points were used to mark harvest locations and polygons (circled areas) were used to indicate harvest effort areas, such as areas searched while hunting moose. Some lines were also drawn in order to depict harvesting activity that did not occur at a specific point; for example, lines were used to depict traplines or courses taken while trolling for fish.

Harvest locations and fishing, hunting, and gathering areas were documented using an application designed on the ArcGIS Runtime SDK for iOS platform; basically a mapping data collection application for iPad. The point, polygon, or line was drawn on a U.S. Geological Survey topographic relief map downloaded on the iPad. The iPad allowed the user to zoom in and out to the appropriate scale, and the ability to document harvesting activities wherever they occurred in the state of Alaska. Once a feature was accepted, an attribute box was filled out by the researcher that noted the species harvested, amount, method of access to the resource, and month(s) of harvest. The data were uploaded via Wi-Fi to a server. Once data collection was complete the data were downloaded into an ArcGIS file geodatabase. The application was developed by HDR, Inc., an environmental research firm located in Anchorage. Paper maps were also available to be used as a reference for respondents as well as by an LRA when an ADF&G researcher was not available for the interview. These maps were 11x17 inches at scales of 1:200,000, 1:300,000, and 1:750,000 and only documented the extent area used in previous surveys. Very few paper maps were used and research staff digitized markings on paper maps using the iPad application.

Once a survey was complete researchers conducted a quality control exercise by matching the map data to the survey form to ensure all map data had been documented. This was completed in the field before the surveys were submitted to the community's lead researcher. Once the data had been uploaded, researchers also verified that the household data were logged into the server.

At the end of the field season, map production began using the mapped data stored in the geodatabase. The data were sorted by resource. Maps were then produced at the species-specific or resource category level.

Researchers encountered few difficulties with the mapping portion of the survey; respondents were generally willing to discuss harvest areas and the process provided good contextual information about subsistence practices as well. One difficulty researchers did encounter was in the age of the base map being used. Dating to the 1960s, the base map turned out to be woefully inaccurate when it came to mapping harvest locations in the Situk River, since the river has migrated approximately 5 miles since the 1960s. Respondents gave their best estimates as to where they harvest, either placing a point on land on our map (but corresponding to the river in reality) or approximating their spot based on the location of the mouth of the river as depicted on our map.



Table 1-5.—Estimated households and sample achievement, Yakutat, 2015.

Sample information	Community
	Yakutat
Number of dwelling units	401
Interview goal	100
Households interviewed	101
Households failed to be contacted	28
Households declined to be interviewed	16
Households moved or occupied by nonresident	37
Total households attempted to be interviewed <sup>a</sup>	145
Refusal rate	13.7%
Final estimate of permanent households	240
Percentage of total households interviewed	42.1%
Interview weighting factor	2.38
Sampled population	249
Estimated population	591.7

Source ADF&G Division of Subsistence household surveys, 2016.

a. This represents the sum of households interviewed, refusals, and contact failures.

Table 1-6.—Survey duration, Yakutat, 2015.

Community	Interview length (in minutes)		
	Average	Minimum	Maximum
Yakutat	67	20	274

Source ADF&G Division of Subsistence household surveys, 2016.

## **Key Respondent Interviews**

While researchers were in the study community they consulted with the tribal government, LRAs, and other knowledgeable individuals to identify key respondents to interview. The purpose of the key respondent interviews was two-fold: prior to drafting the survey, researchers met with several Yakutat residents to better understand general resource issues in Yakutat to ensure the survey would be as relevant and useful as possible; during and after the survey administration, key respondent interviews were done to provide additional context for the quantitative data and also to provide information for the community background section, the seasonal round sections, harvest-over-time analysis, and the community comments and concerns section. Researchers conducted 10 key respondent interviews, prior to survey administrations, during the survey period, and afterward during participant observation trips and other field visits. Key respondent interviews were semi-structured and were loosely directed by a key respondent interview protocol designed by project researchers (see Appendix C). Besides gathering qualitative data through the key respondent interview protocol, ADF&G staff took notes during interviews to provide additional context for this report. Researchers analyzed key respondent interviews and interview notes in preparation for this report. Key respondents were informed that, to maintain anonymity, their names would not be included in this report.

## **Household Survey Implementation**

A letter of support from YTT was received in July 2015. As mentioned previously, scoping meetings were held at the tribal council meeting on December 16, 2015, and at the City and Borough of Yakutat assembly meeting on January 21, 2016. The initial round of survey administration occurred from January 20 through January 31, 2016. An all-day training session was held on January 20 with 7 potential LRAs. ADF&G staff participating in surveys during this time were Ream, Sill, Kukkonen, and Hannah Johnson. Barbara Cellarius, NPS, and Jessie Merriam and Anna Levine, volunteers, also assisted. A total of 81 surveys were completed during the week-long effort. After staff left, 5 more surveys were completed by 2 LRAs. These were mailed to Sill in Juneau, who coded them and forwarded them to the division's Information Management unit in Anchorage. Staff returned to Yakutat from April 5–11, 2016, to conduct participant observations, key respondent interviews, and 15 more surveys. The survey effort went well, but on average the surveys were longer than anticipated. In addition to the harvest questions, several opinion questions were asked about each resource category. These questions elicited a lot of comments from survey respondents and caused slightly longer surveys and a generally slower than expected survey effort.

## **DATA ANALYSIS AND REVIEW**

### **Survey Data Entry and Analysis**

Surveys were coded for data entry by research staff and reviewed by the project lead for consistency. Responses were coded following standardized conventions used by the Division of Subsistence to facilitate data entry. Information Management staff within the Division of Subsistence set up database structures within Microsoft SQL Server at ADF&G in Anchorage to hold the survey data. The database structures included rules, constraints, and referential integrity to ensure that data were entered completely and accurately. Data entry screens were available on a secured internal network. Daily incremental backups of the database occurred, and transaction logs were backed up hourly. Full backups of the database occurred twice weekly. This ensured that no more than 1 hour of data entry would be lost in the unlikely event of a catastrophic failure. All survey data were entered twice and each set compared in order to minimize data entry errors.

Once data were entered and confirmed, information was processed with the use of Statistical Package for the Social Sciences (SPSS) software, version 19. Initial processing included the performance of standardized logic checks of the data. Logic checks are often needed in complex data sets where rules, constraints, and referential integrity do not capture all of the possible inconsistencies that may appear. Harvest data collected as numbers of animals, or in gallons or buckets, were converted to pounds usable weight using standard factors (see Appendix D for conversion factors).

ADF&G staff also used SPSS for analyzing the survey information. Analyses included review of raw data frequencies, cross tabulations, table generation, estimation of population parameters, and calculation of confidence intervals for the estimates. Missing information was dealt with on a case-by-case basis according to standardized practices, such as minimal value substitution or using an averaged response for similarly-characterized households. Typically, missing data are an uncommon, randomly-occurring phenomenon in household surveys conducted by the division. In unusual cases where a substantial amount of survey information was missing, the household survey was treated as a “non-response” and not included in community estimates. ADF&G researchers documented all adjustments.

Harvest estimates and responses to all questions were calculated based upon the application of weighted means (Cochran 1977). These calculations are standard methods for extrapolating sampled data. As an example, the formula for harvest expansion is:

$$H_i = \bar{h}_i S_i \quad (1)$$

$$\bar{h}_i = \frac{h_i}{n_i} \quad (2)$$

where:

$H_i$  = the total estimated harvest (numbers of resource or pounds) for the community  $i$ ,

$\bar{h}_i$  = the mean harvest of returned surveys,

$h_i$  = the total harvest reported in returned surveys,

$n_i$  = the number of returned surveys, and

$S_i$  = the number of households in a community.

As an interim step, the standard deviation (SD) (or variance [V], which is the SD squared) was also calculated with the raw, unexpanded data. The standard error (SE), or SD of the mean, was also calculated. This was used to estimate the relative precision of the mean, or the likelihood that an unknown value would fall within a certain distance from the mean. In this study, the relative precision of the mean is shown in the tables as a confidence limit (CL), expressed as a percentage. Once SE was calculated, the CL was determined by multiplying the SE by a constant that reflected the level of significance desired, based on a normal distribution. The value of the constant is derived from the student's  $t$  distribution, and varies slightly depending upon the size of the community. Though there are numerous ways to express the formula below, it contains the components of a SD, V, and SE:

$$CL\%(\pm) = \frac{t_{\alpha/2} \times \frac{s}{\sqrt{n}} \times \sqrt{\frac{N-n}{N-1}}}{\bar{x}} \quad (3)$$

where:

$s$  = sample standard deviation,

$n$  = sample size,

$N$  = population size,

$t_{\alpha/2}$  = student's  $t$  statistic for alpha level ( $\alpha=0.95$ ) with  $n-1$  degrees of freedom, and

$\bar{x}$  = sample mean.

Small CL percentages indicate that an estimate is likely to be very close to the actual mean of the sample. Larger percentages mean that estimates could be further from the mean of the sample.

The corrected final data from the household survey will be added to the Division of Subsistence CSIS. This publicly-accessible database includes community-level study findings.

### **Population Estimates and Other Demographic Information**

As noted above, a goal of the research was to collect demographic information for a sample of all year-round households in the study community. For this study, “year-round” was defined as being domiciled in the community when the surveys took place and for at least 6 months during the study year 2015. Because not all households were interviewed, population estimates for the community were calculated by multiplying the average household size of interviewed households by the total number of year-round households, as identified by Division of Subsistence researchers in consultation with community officials and other knowledgeable respondents.

There may be several reasons for the differences among the population estimate generated from the division’s surveys and other demographic data developed by the 2010 federal census (U.S. Census Bureau 2011), the U.S. Census Bureau’s American Community Survey (U.S. Census Bureau n.d.), and the Alaska Department of Labor and Workforce Development (Alaska Department of Labor and Workforce Development 2017). Sampling of households, depending on when surveys are conducted or eligibility criteria for inclusion in the survey, may explain differences in the population estimates. The community of Yakutat experiences seasonal fluctuations in population during the spring and summer because of guided and non-guided sport fishing and guided sport hunting. This survey was conducted during the winter months when most people in the community are full-time residents. During the final survey trip in April, Yakutat was a much busier community with many more non-local residents present. In addition, households were only eligible for this survey if they had been a resident in the community for at least 6 months during 2015; however, only a few households were excluded based on that criterion.

### **Map Data Entry and Analysis**

As discussed above, maps were generated based on data collected using an iPad or on 11x17-inch paper maps. All data were entered on the iPad, whether in the field during interviews or by ADF&G research staff while coding survey data. Map features were matched to the survey form to ensure that all harvest data were recorded accurately. Once all data were entered, an ArcGIS file geodatabase was downloaded by ADF&G researchers from the server and maps showing harvest locations for each species or resource category were created in ArcGIS 10.3 using a standard template for reports. Maps show harvest locations for fish species, harvest areas for plants, berries, wood, and birds, and hunting areas or traplines for land mammals. To ensure confidentiality, maps showing harvest locations for large land mammals are not produced for the report. Maps were reviewed at a community review meeting to ensure accuracy.

### **Food Security Analysis**

The “food security” section of the survey used a modified version of a standard national questionnaire to assess whether or not the household had enough food to eat, whether from subsistence sources or from market sources. The protocol used in this survey was a modified version of the 12-month food security scale questionnaire developed by the U.S. Department of Agriculture (USDA). This questionnaire is administered nationwide each year as part of the annual Current Population Survey (CPS). In 2015, approximately 125,000 U.S. households were interviewed, including 1,433 in Alaska (Coleman-Jensen et al. 2016). From CPS data, the USDA prepares an annual report on food security in the United States.

Food security protocols have been extensively reviewed (Coates 2004; Webb et al. 2006; Wunderlich and Norwood 2006) and have been used around the world, including in northern Burkina Faso (Frongillo and Nanama 2006), Bangladesh (Coates et al. 2006), Bolivia and the Philippines (Melgar-Quinonez et al. 2006), and Brazil (Pérez-Escamilla et al. 2004). Although there have been efforts to develop a universal food security measurement protocol (Swindale and Bilinsky 2006), researchers often modify the protocol slightly to respond to community social, cultural, and economic circumstances, as was done here.

For this study, the food security protocol was modified by the addition of several questions designed to determine whether food insecurities, if any, were related to subsistence foods or store-bought foods.

Additionally, the wording of some questions was changed slightly. As in Brazil (Pérez-Escamilla et al. 2004), the USDA term “balanced meals” was difficult to interpret for indigenous Alaska populations, and was replaced with the term “healthy meals” to reflect unique dietary and cultural circumstances in rural Alaska.

### **Community Review Meetings**

ADF&G staff presented preliminary survey findings and associated search area and harvest maps during 2 community events. Draft results are presented to the study community to ensure that they make sense from the perspective of the people they are about, to identify any problematic results that are possibly incorrect, to seek additional explanations for unusual results, and to verify the accuracy of the mapped data. A selection of draft harvest results was included in a poster that was on display during the annual Fairweather Days celebration on August 6, 2016. This event is held at the picnic area near Cannon Beach and in 2016 was organized through the Glacier Bear Lodge. ADF&G staff Kukkonen and Sill and NPS staff Cellarius set up a table and tent (provided by NPS) and displayed the project results poster as well as other educational and informative materials from ADF&G and NPS. Many people stopped by the booth and several provided feedback on the poster. Comprehensive survey results were also presented during the Yakutat Tern Festival on June 2, 2017, held in the Yakutat high school auditorium. The Yakutat Tlingit Tribe and the Tern Festival organizing committee members were instrumental in making this presentation possible. Approximately 30 people were in attendance and provided feedback on project results. Comments received during both of these events are incorporated in the section “Local Comments and Concerns” that appears at the end of the next chapter. Both of these annual events were advertised and well-attended by community members, former community members, and visitors.

### **FINAL REPORT ORGANIZATION**

This report summarizes the results of systematic household surveys and mapping interviews and also summarizes resident feedback provided at community review meetings. The following chapter begins with background information on Yakutat’s history and current setting, followed by discussion of tables and figures that report findings on demographic characteristics, employment characteristics, food security, individual participation in harvesting and processing of wild resources, and characteristics of resource uses and harvests—including the sharing of wild foods and search and harvest areas. Table 1-7 shows selected study findings and will be referenced in later discussions of survey results. In addition, the next chapter contains discussion of several participant observation trips. The next chapter also describes responses to statements about observations of wild resource populations and environmental and economic trends in Yakutat; these descriptions are integrated with local comments and concerns that were voiced during the survey effort, key respondent interviews, and the various meetings held in Yakutat at which project information was presented. The final focus of the findings, discussion, and conclusion chapter in this report provides a short, general overview of the harvests and uses of wild resources in the study community, including comparisons to other Southeast Alaska community results from recent surveys. Tabular responses to the additional questions asked on the survey, beyond the standard division questions, which were designed to provide information to meet the project objectives concerning resilience and adaptation in Yakutat, are presented in Appendix E. Discussion and analysis of these questions and the responses to the natural resource, natural environment, and economic observation statements will appear in a forthcoming journal article.

ADF&G provided a draft report to project collaborator Barbara Cellarius from WRST for review and comment. After receipt of comments, the report was finalized. Copies of the report were sent to YTT, the City and Borough of Yakutat, NPS, members of the WRST Subsistence Resource Commission, U.S. Forest Service, and coauthor Joshua Ream. ADF&G mailed copies of a short (4-page) summary of the study findings to recipients of the reports located in Yakutat, as well as the Yakutat ADF&G office, to distribute to local residents (Appendix F).

Table 1-7.—Comparison of selected study findings, Yakutat, 2015.

Category	Community Yakutat
<b>Demography</b>	
Population	591.7
Percentage of population that is Alaska Native	59.0%
Percentage of household heads born in Alaska	53.6%
Average length of residency of household heads (year)	32.2
<b>Cash economy</b>	
Average number of months worked for employed adults	9.8
Percentage of employed adults working year-round	62.1%
Percentage of income from sources other than employment	22.1%
Average household income <sup>a</sup>	\$72,620
Per capita income <sup>a</sup>	\$29,456
<b>Resource harvest and use</b>	
Per capita harvest, pounds usable weight	261.9
Average household harvest, pounds usable weight	645.8
Number of resources used by 50% or more households	10.0
Average number of resources used per household	17.5
Average number of resources attempted to be harvested per household	13.2
Average number of resources harvested per household	12.0
Average number of resources received per household	8.3
Average number of resources given away per household	7.4
Percentage of total harvest taken by top 25% ranked households	69.6%
Percentage of households that harvested 70% of harvest	25.7%
Per capita harvest (lb) by lowest ranked 50% of households	22.9
Percentage of total harvest taken by lowest ranked 50% of harvesting households	8.4%
Average number of resources used by lowest ranked 50% of households	11.4
Average number of resources used by top 25% ranked households	29.4

Source ADF&G Division of Subsistence household surveys, 2016.

a. Includes income from sources other than employment.



## 2. FINDINGS, DISCUSSION, AND CONCLUSION

### COMMUNITY BACKGROUND

Yakutat, situated on the north coast of the Gulf of Alaska, is a striking place: the St. Elias Mountains tower in the distance, large glacial forelands and fjords front the ocean, and forests, streams, and wetlands cover the land. It is an isolated community: the only year-round community and one of few protected anchorages along the 250-mile stretch of coastline from Cape Spencer to the Copper River. The landscape is constantly changing because of retreating glaciers, its location on the northern edge of the Pacific Plate, and direct exposure to the forces of the Pacific Ocean. The community is bordered by Tongass National Forest to the south and east and Wrangell-St. Elias National Park and Preserve to the north. To the northwest, 225 miles distant, lies Cordova, with Juneau approximately the same distance to the southeast. Canada borders to the north and east and the Gulf of Alaska is to the south and west.

Prior to European contact, numerous Native villages were scattered among anadromous fish streams along the hundreds of miles of the coast. Eventually, these settlements coalesced into Yakutat, and while Yakutat is considered a Tlingit community, it still retains the cultural traces of the people of these settlements, including Eyak, Ahtna, and relatives of the southern Tutchone (de Laguna 1972). There are 5 major clans that migrated to the Yakutat area: the *Teikweidi* came from the Dry Bay area to the Ahrnklin River, just west of Yakutat; the *Shunkukeidi* came from the Dry Bay area; the *Galix Kaagwaantaan* were Copper River people; the *L'unax.ádi* hail from the Lituya Bay and Dry Bay areas; and the *Kwáashk'ikwáan* were part of the migration of Copper River people to the coast (Deur et al. 2015; de Laguna 1972). A key respondent and elder who participated in this study explained that Yakutat proper became a year-round consolidated community as a result of non-local pressure. He described a move from an old village site at Dry Bay:

There used to be a cannery there in the 1800s. That kind of dwindled, then in 1906 a cannery was built here in Yakutat. The thing that was unique about why people began to move from that area was that when the missionaries and the federal government came they required that all children had to go to school so they built a mission here and a school. The people down there kind of resisted that. They didn't want to move so they lingered there for as long as they could. And then they eventually moved and settled here in Yakutat. They intermarried with the people from here [Yakutat] that came down from the Copper River area. So now we today are known as the Yakutat Tlingit which comprises Eyak, Athabascan, and Tlingit.

In the late 1700s, Russians with the Shelikov Company as well as English, Spanish, and American traders and explorers came to Yakutat. The Russians built an agricultural colony and trading post, but local residents destroyed them in 1805. Smallpox and other disasters reduced the population of settlements along the Gulf of Alaska coast by the mid-19th century.

Around the turn of the 20th century, Yakutat was prospering from its rich salmon grounds and abundant sea otters, bringing traders, missionaries, and, briefly, goldminers. The contemporary city and borough grew up around the old village site that was established by missionaries in 1889. A salmon cannery was established in 1904 to process sockeye salmon from the Situk and Lost rivers. Southeast Alaska's first standard-gauge railroad was constructed to haul building materials to the cannery from Yakutat; later it was used to transport fish. A lumber company also opened in the early 1900s, which supplied the necessary timber to the cannery site. By 1920, most families in the area had built permanent homes near the cannery (City and Borough of Yakutat 2010), which remains the center of activity in Yakutat today.

Salmon and sea otter populations crashed after World War I, and Yakutat became the only settlement between Cordova and the rest of Southeast Alaska. During World War II, families that were living in the area around Yakutat—on Knight Island or Dry Bay, for instance—were made to move into Yakutat proper (Deur et al. 2015). World War II brought the creation of an airstrip and the quartering of up to 10,000 soldiers. A military White Alice communications site was built at Cape Yakataga, west of Icy Bay, in the

1950s. Although the military base in Yakutat closed shortly after the war ended, Yakutat was left with a major airport that reduced the community's isolation. The salmon cannery was plagued with variable fish runs, changing regulations, and price fluctuations among fish buyers. Eventually the cannery owners went bankrupt, leading to the closure of the cannery in 1970 (City and Borough of Yakutat 2010). However, commercial fishing and fish processing remain important components of the local economy. Commercial catches generally increased from the mid-1970s through the early 2000s, but have recently experienced a slight downturn (Conrad and Gray 2017). In 2015, there were 4 shore-based processors operating out of Yakutat.<sup>1</sup> In addition to commercial fishing, several other sectors play an important economic role, now or in the recent past; timber harvesting, tourism (consumptive and non-consumptive), outdoor recreation, oil and gas development, and government all contribute to economic development in Yakutat. Several lodges cater to non-local anglers and hunters.

Yakutat incorporated as a first-class city in 1948, but in 1992 the city was dissolved and a borough was formed. The City and Borough of Yakutat is governed by a mayor, city manager, and a borough assembly. The Yakutat Tlingit Tribe is a federally recognized tribal government. Yak-Tat Kwaan, Inc., Chugach Alaska Corporation, and Sealaska Corporation—3 Alaska Native corporations formed following passage of the Alaska Native Claims Settlement Act (ANCSA)—own land in the Yakutat area. Yakutat convenes a fish and game advisory committee to the Alaska Board of Game and Board of Fisheries, administered through ADF&G, and is represented on the Federal Subsistence Board's Southeast Alaska Subsistence Regional Advisory Council and the Wrangell-St. Elias National Park Subsistence Resource Commission. The NPS, the U.S. Forest Service, and ADF&G all have year-round offices in the community. Alongside a post office, there is a K–12 school, a health clinic, and a police/emergency services department. Yakutat supports 2 grocery stores, a hardware store, and a coffee shop. During summer months, some of the local lodges open restaurants. The city is accessible by daily jet service to Anchorage and Juneau and the Alaska Marine Highway System includes monthly ferries to the community.

## POPULATION ESTIMATES AND DEMOGRAPHIC INFORMATION

This study estimated the 2015 population of Yakutat at 592 people living in 240 households (Table 2-1). The U.S. Census Bureau estimated 662 residents living in 270 households in 2010 and the most recent 5-year American Community Survey (ACS), from 2011–2015, estimated Yakutat's population at 597 individuals in 250 households. As estimated by these same sources, approximately 50% or 53% of the population of Yakutat identifies as Alaska Native; in comparison, this survey estimated 59% of the population was Alaska Native. The overall population estimates do not differ substantially from each other (Figure 2-1). Some sources of potential differences among population estimates come from the methods of survey administration and the time of the year that the estimates were made; the population of Yakutat also is undergoing a slight decline (Figure 2-2). This study was conducted in January, with some follow-up surveys done in April, prior to the seasonal influx of residents associated with the tourism industry and other summer residents.

Based on the decennial census, Yakutat grew through much of the latter half of the 20th century before showing a slightly declining trend during the 21st century (Figure 2-2). Declines in the commercial fisheries likely contributed to the decrease in population after the 1950s; while de Laguna (1972) was in Yakutat she wrote that people had fallen on hard times because of the decline in salmon populations, culminating in the shuttering of the cannery in 1970. However, the city of Yakutat has suggested that the 1970 estimate was low, since new residences were being established in the airport area, which was a part of the community that would not have been included in the U.S. Census Bureau estimate. The 1970s were a boom time for Yakutat as federal lands passed into local ownership through avenues such as ANCSA and oil and gas exploration (City and Borough of Yakutat 2010). The most recent slight decline in population mirrors similar declines in other Southeast Alaska communities since 2000 (Hunsinger et al. 2012; Sill and Koster 2017a–b). Census boundaries changed between the 1990 and 2000 surveys, with Yakutat moving from a city within the Skagway-Yakutat-Angoon Census Area to becoming its own census area called City and

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1. Alaska Department of Fish and Game. 2016. "2015 Shorebased Processors by Region and Plant Location." [https://www.adfg.alaska.gov/static/license/fishing/pdfs/shore\\_based\\_processor\\_2015.pdf](https://www.adfg.alaska.gov/static/license/fishing/pdfs/shore_based_processor_2015.pdf) (accessed June 2017).



Table 2-1.—Population estimates, Yakutat, 2010 and 2015.

	Census (2010)	5-year American Community Survey (2011–2015)		This study (2015)	
		Estimate	Range <sup>a</sup>	Estimate	Range <sup>b</sup>
<b>Total population</b>					
Households	270	250.0	215 – 285	240.0	
Population	662	597.0	536 – 658	591.7	531 – 653
<b>Alaska Native</b>					
Population	330	317.0	267 – 367	349.3	297 – 401
Percentage	49.8%	53.1%	44.7% – 61.5%	59.0%	50.3% – 67.8%

*Sources* U.S. Census Bureau (2011) for 2010 estimate; U.S. Census Bureau for American Community Survey (ACS) 2015 estimate (5-year average); and ADF&G Division of Subsistence household surveys, 2016, for 2015 estimate.

*Note* Division of Subsistence household survey eligibility requirements differ from those used by (ACS).

a. ACS data range is the reported margin of error.

b. No range of households is estimated for division surveys.

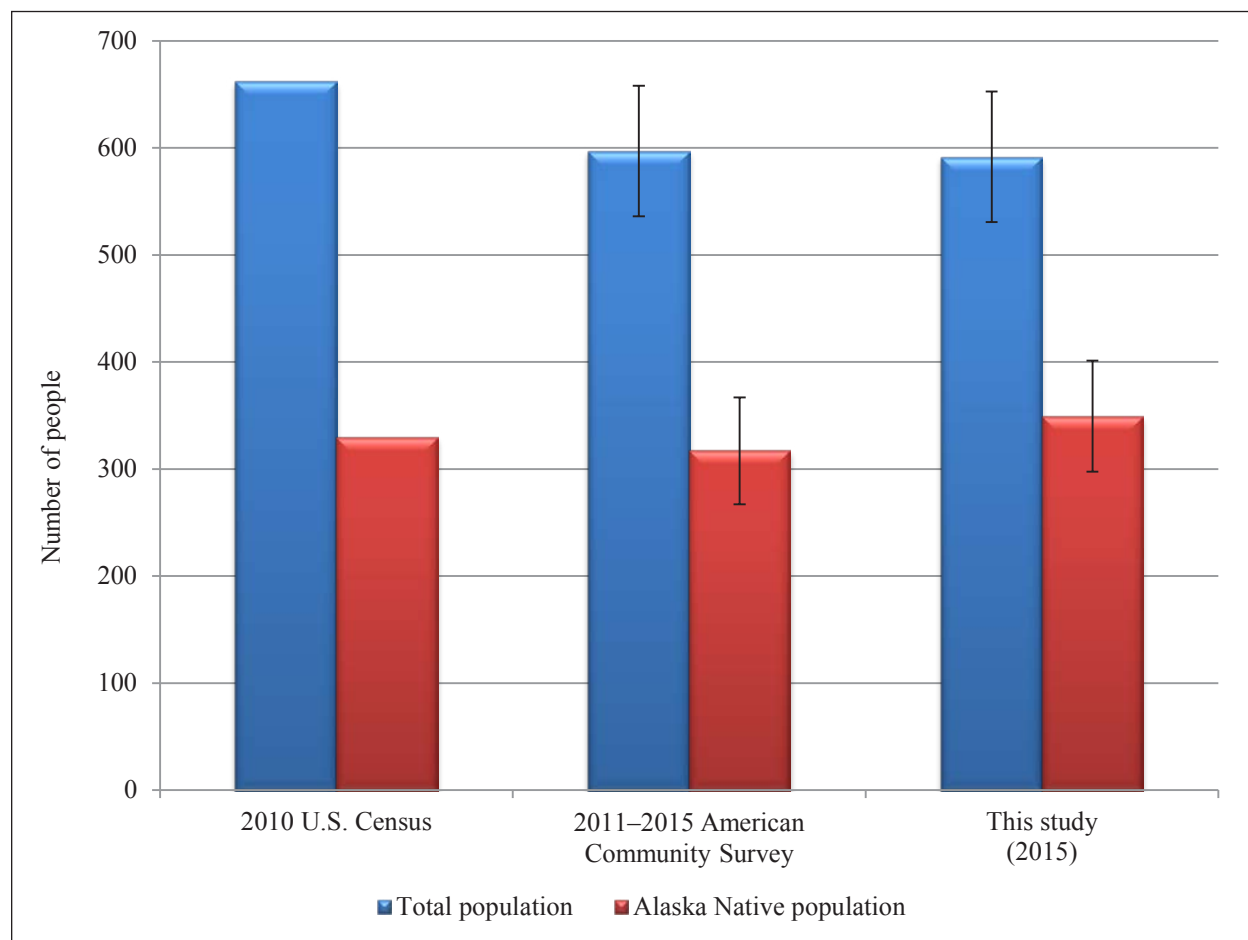


Figure 2-1.—Alaska Native and overall population estimates, Yakutat, 2010 and 2015.

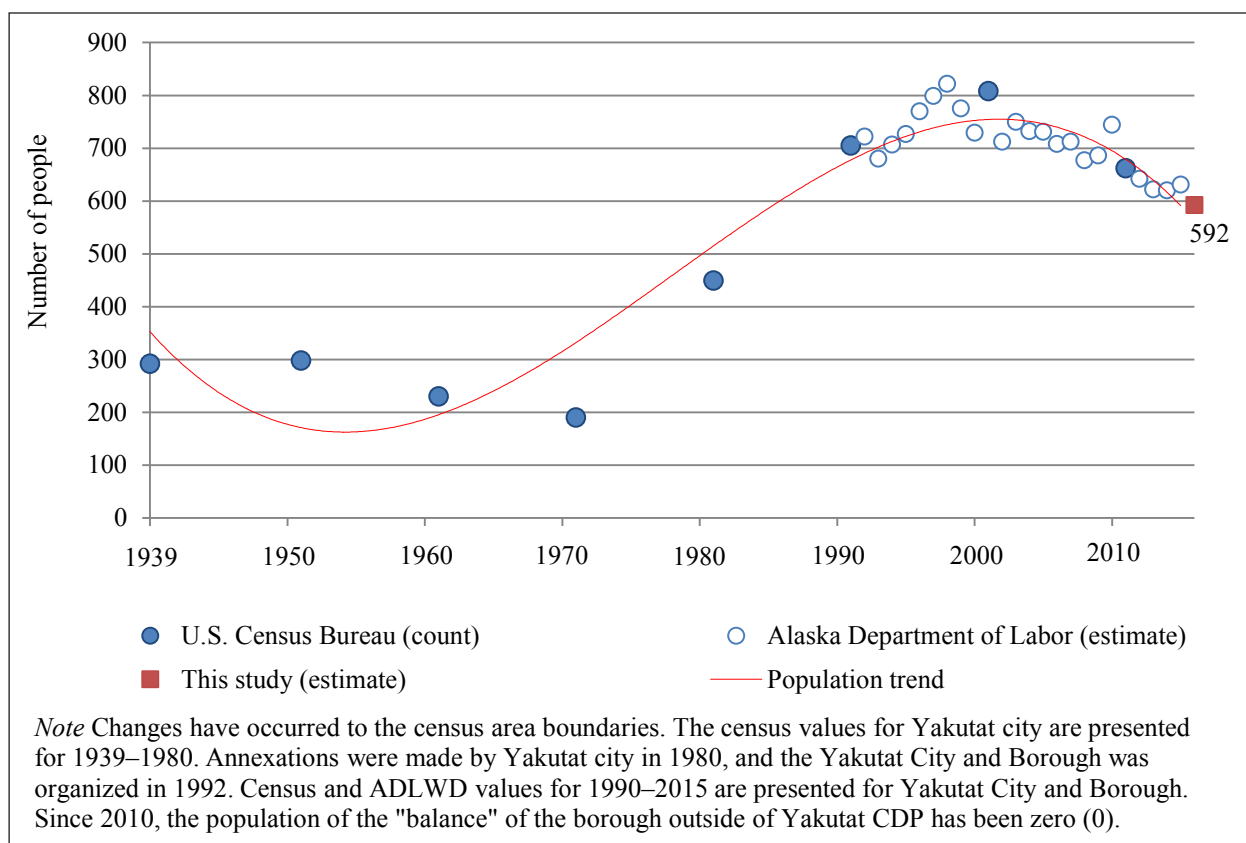


Figure 2-2.—Historical population estimates, Yakutat, 1939–2015.

Borough of Yakutat, which included a different geographic area encompassing the Icy Bay logging camps. Part of the population decline after the 2000 census is due to the closure of these camps in the early 2000s. The new census area also contained the new Yakutat CDP (U.S. Census Bureau 2003).

For this study, researchers surveyed 101 randomly selected households (Table 2-2). From this sample, several demographic characteristics of the community were estimated. The average household size was 2.5 people, with a minimum size of 1 person and a maximum of 8 people. The average resident of Yakutat had lived in the community for 24 years, with the maximum length of residency being 84 years. In comparison, the average head of household had lived in the community for just longer than 32 years. The average resident was 37 years old and the median age was 39; the eldest resident living in a surveyed household was 88 years old. More males resided in Yakutat than females, with 323 males compared to 269 females (Table 2-3; Figure 2-3). The greatest gender imbalance occurred in the 5–9 age cohort, with 26 females in this group compared to 7 males, and the 40–44 age cohort with 21 males and 5 females. The distribution of ages in the community was relatively equal. The above-80 age groups had the fewest people; outside of this older group of residents, the age groups of 25–29 and 40–44 were the next smallest groups.

Nearly one-half of all Yakutat residents were born in the community (Table 2-4). Almost 29% of residents were born outside of Alaska; other locations throughout Alaska, as well as foreign countries, were the birthplaces of the remaining population. More household heads were born in a U.S. state other than Alaska (40%) than in any single Alaska community (Table 2-5). Slightly more than 34% of household heads were born in Yakutat; no other single community served as the birthplace of a substantial proportion of Yakutat household heads.

Table 2-2.—Sample and demographic characteristics, Yakutat, 2015.

Characteristics	Community Yakutat
Sampled households	101.0
Eligible households	240.0
Percentage sampled	42.1%
Sampled population	249.0
Estimated community population	591.7
<b>Household size</b>	
Mean	2.5
Minimum	1.0
Maximum	8.0
<b>Age</b>	
Mean	37.2
Minimum <sup>a</sup>	0.0
Maximum	88.0
Median	39
<b>Length of residency</b>	
Total population	
Mean	23.8
Minimum <sup>a</sup>	0.0
Maximum	84.0
Heads of household	
Mean	32.2
Minimum <sup>a</sup>	1.0
Maximum	84.0
<b>Alaska Native</b>	
Estimated households <sup>b</sup>	
Number	140.2
Percentage	58.4%
Estimated population	
Number	349.3
Percentage	59.0%

Source ADF&G Division of Subsistence household surveys, 2016.

a. A minimum age of 0 (zero) is used for infants who are less than 1 year of age.

b. The estimated number of households in which at least 1 head of household is Alaska Native.

Table 2-3.—Population profile, Yakutat, 2015.

Age	Male			Female			Total		
	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	21.4	6.6%	6.6%	21.4	8.0%	8.0%	42.8	7.2%	7.2%
5–9	7.1	2.2%	8.8%	26.1	9.7%	17.7%	33.3	5.6%	12.9%
10–14	26.1	8.1%	16.9%	19.0	7.1%	24.8%	45.1	7.6%	20.5%
15–19	26.1	8.1%	25.0%	19.0	7.1%	31.9%	45.1	7.6%	28.1%
20–24	14.3	4.4%	29.4%	16.6	6.2%	38.1%	30.9	5.2%	33.3%
25–29	14.3	4.4%	33.8%	4.8	1.8%	39.8%	19.0	3.2%	36.5%
30–34	23.8	7.4%	41.2%	19.0	7.1%	46.9%	42.8	7.2%	43.8%
35–39	16.6	5.1%	46.3%	16.6	6.2%	53.1%	33.3	5.6%	49.4%
40–44	21.4	6.6%	52.9%	4.8	1.8%	54.9%	26.1	4.4%	53.8%
45–49	23.8	7.4%	60.3%	28.5	10.6%	65.5%	52.3	8.8%	62.7%
50–54	19.0	5.9%	66.2%	14.3	5.3%	70.8%	33.3	5.6%	68.3%
55–59	14.3	4.4%	70.6%	16.6	6.2%	77.0%	30.9	5.2%	73.5%
60–64	30.9	9.6%	80.1%	19.0	7.1%	84.1%	49.9	8.4%	81.9%
65–69	26.1	8.1%	88.2%	11.9	4.4%	88.5%	38.0	6.4%	88.4%
70–74	19.0	5.9%	94.1%	7.1	2.7%	91.2%	26.1	4.4%	92.8%
75–79	11.9	3.7%	97.8%	4.8	1.8%	92.9%	16.6	2.8%	95.6%
80–84	0.0	0.0%	97.8%	4.8	1.8%	94.7%	4.8	0.8%	96.4%
85–89	0.0	0.0%	97.8%	4.8	1.8%	96.5%	4.8	0.8%	97.2%
90–94	0.0	0.0%	97.8%	0.0	0.0%	96.5%	0.0	0.0%	97.2%
95–99	0.0	0.0%	97.8%	0.0	0.0%	96.5%	0.0	0.0%	97.2%
100–104	0.0	0.0%	97.8%	0.0	0.0%	96.5%	0.0	0.0%	97.2%
Missing	7.1	2.2%	100.0%	9.5	3.5%	100.0%	16.6	2.8%	100.0%
<b>Total</b>	<b>323.2</b>	<b>100.0%</b>	<b>100.0%</b>	<b>268.5</b>	<b>100.0%</b>	<b>100.0%</b>	<b>591.7</b>	<b>100.0%</b>	<b>100.0%</b>

Source ADF&G Division of Subsistence household surveys, 2016.

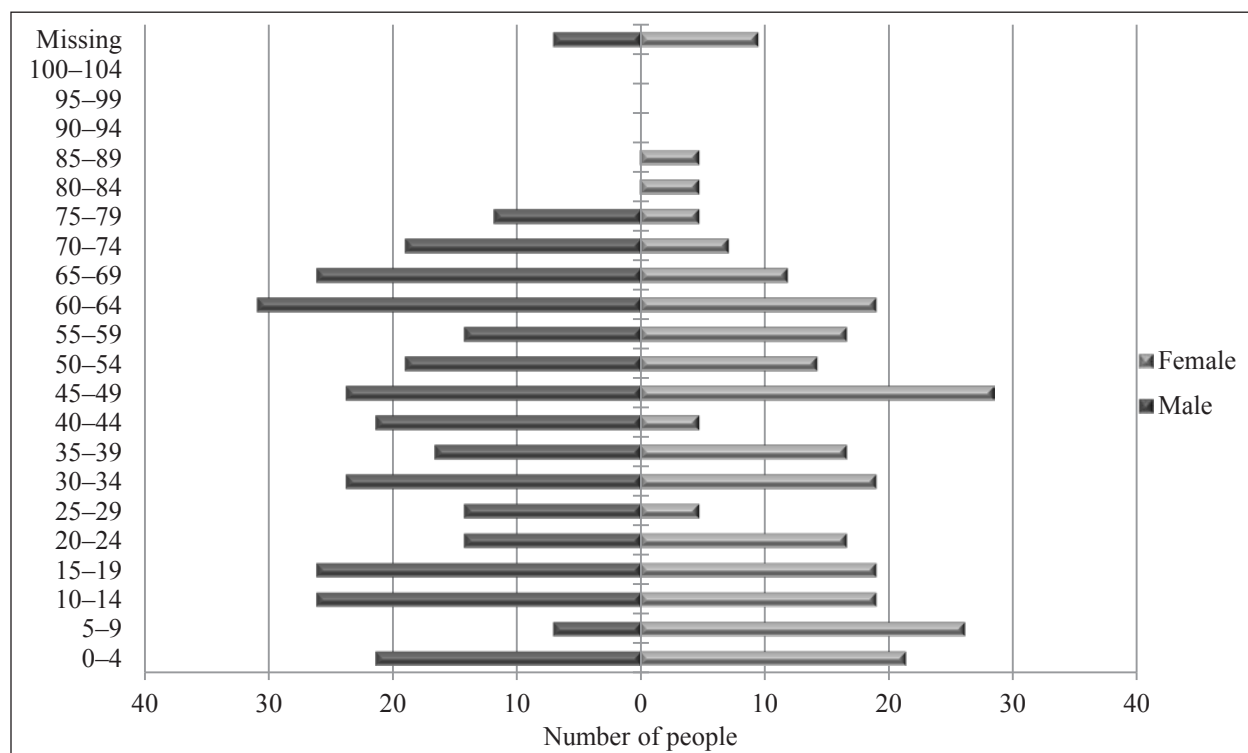


Figure 2-3.—Population profile, Yakutat, 2015.

Table 2-4.—Birthplaces of population, Yakutat, 2015.

Birthplace	Percentage
Anchorage	2.0%
Angoon	0.8%
Barrow	0.4%
Fairbanks	1.6%
Hoonah	0.4%
Juneau	3.6%
Kake	0.4%
King Salmon	0.4%
Klawock	0.4%
McGrath	0.4%
Nome	0.4%
Ruby	0.4%
Sitka	2.0%
Unalakleet	0.4%
Wasilla	0.4%
Wrangell	0.8%
Yakutat	49.0%
Eagle River	0.4%
Dry Bay	0.4%
Douglas	0.4%
Other Alaska	1.2%
Other U.S.	28.9%
Foreign	3.6%
Missing	1.2%

Source ADF&G Division of Subsistence household surveys, 2016.

Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table 2-5.—Birthplaces of household heads, Yakutat, 2015.

Birthplace	Percentage
Anchorage	0.6%
Angoon	0.6%
Fairbanks	1.9%
Hoonah	0.6%
Juneau	3.9%
Kake	0.6%
King Salmon	0.6%
Klawock	0.6%
McGrath	0.6%
Nome	0.6%
Ruby	0.6%
Sitka	2.6%
Unalakleet	0.6%
Wrangell	1.3%
Yakutat	34.4%
Dry Bay	0.6%
Douglas	0.6%
Other Alaska	1.3%
Other U.S.	40.3%
Foreign	5.8%
Missing	0.6%

Source ADF&G Division of Subsistence household surveys, 2016.

Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

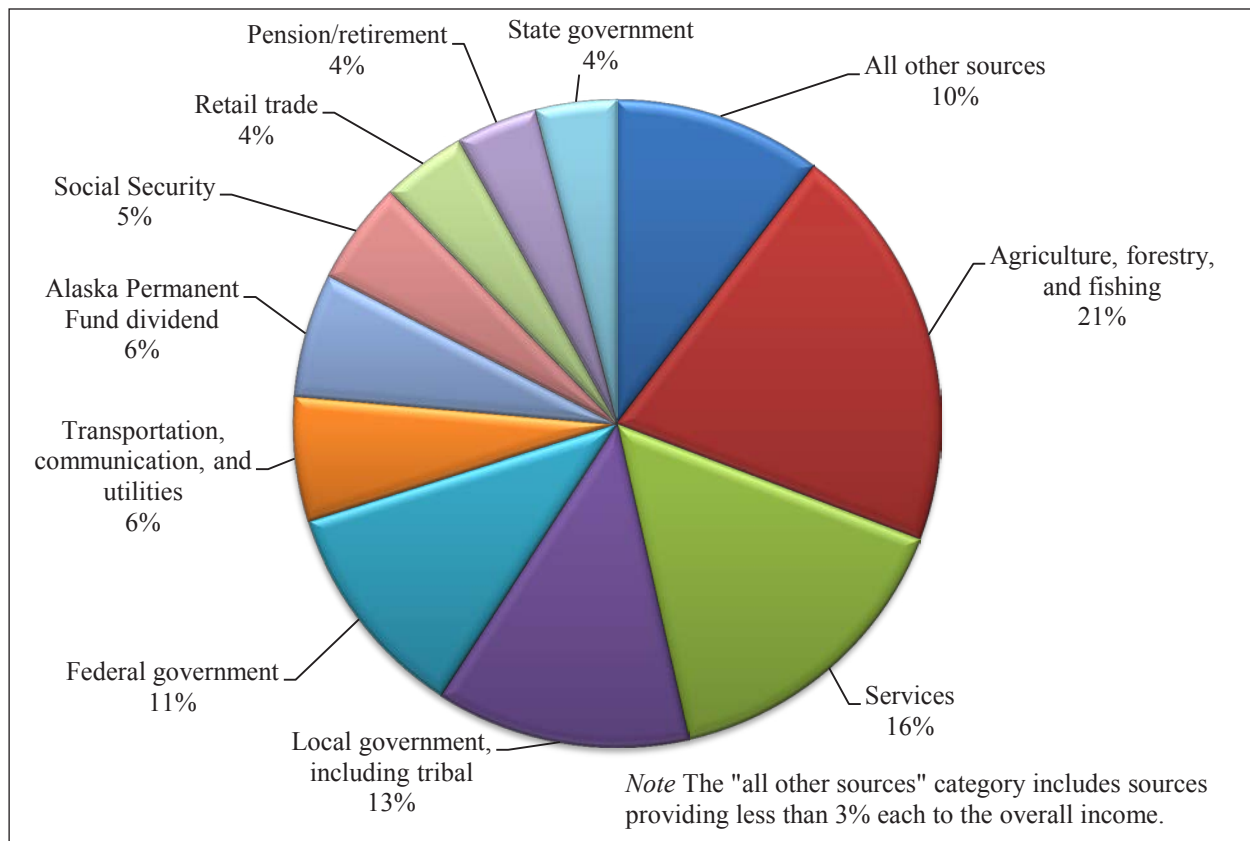


Figure 2-4.—Top income sources, Yakutat, 2015.

## INCOME AND CASH EMPLOYMENT

In 2015, the agriculture, forestry, and fishing sector of the economy contributed the most income to community households (21% of total income) (Figure 2-4). This was followed closely by services (16%), local government (13%), and the federal government (11%). Approximately 78% (\$13.6 million) of the community's income came in the form of earned income—wage employment—while 22% came from sources such as Alaska Permanent Fund dividends (6% of total income), Social Security (5%), or pension/retirement (4%) (Table 2-6). Overall, the average household income was \$72,620; this is on par with Sitka, but is higher than other recently surveyed Southeast Alaska communities (Sill and Koster 2017a:111). The median household income was slightly higher at \$73,472, which is not significantly different from the ACS estimate for the Yakutat CDP or for the entire state for the period 2011–2015 (Figure 2-5). Per capita income for Yakutat residents was \$29,456 (Table 1-7), which is also higher than for recently surveyed Southeast Alaska communities (Sill and Koster 2017a:111).

Turning from income to employment, agriculture, forestry, and fishing also provided the most jobs and employed the greatest number of individuals and households, followed by the services industry and local government (Table 2-7). The majority of jobs in the community were full time, followed by part-time and on-call positions (Table 2-8). Approximately three-quarters of employed persons and employed households held full-time jobs, followed by part-time and on-call positions. Shift work was the least common work schedule. In 2015, 78% of adults living in Yakutat were employed (Table 2-9). On average, an employed individual worked just shy of 10 months during the year. Eighty-four percent of households contained at least 1 employed individual and on average held nearly 2 employed persons. An average of 2.5 jobs was held in an employed household.

Table 2-6.—Estimated earned and other income, Yakutat, 2015.

Income source	Number of employed adults	Number of households	Total for community	-/+ 95% CI	Mean per household	Percentage of total community income
<b>Earned income</b>						
Agriculture, forestry, and fishing	119.7	86.4	\$3,561,015	\$2,154,905 – \$5,972,265	\$14,838	20.4%
Services	94.8	76.8	\$2,726,178	\$1,553,028 – \$4,516,372	\$11,359	15.6%
Local government, including tribal	97.3	69.6	\$2,212,992	\$1,367,694 – \$3,497,105	\$9,221	12.7%
Federal government	44.9	40.8	\$1,915,819	\$1,039,105 – \$3,298,663	\$7,983	11.0%
Transportation, communication, and utilities	29.9	28.8	\$1,087,249	\$491,371 – \$1,945,863	\$4,530	6.2%
Retail trade	34.9	33.6	\$733,970	\$328,887 – \$1,315,414	\$3,058	4.2%
State government	20.0	16.8	\$702,846	\$260,609 – \$1,616,431	\$2,929	4.0%
Mining	2.5	2.4	\$237,886	\$196,687 – \$652,980	\$991	1.4%
Construction	15.0	14.4	\$232,119	\$62,635 – \$602,231	\$967	1.3%
Manufacturing	10.0	9.6	\$125,431	\$13,736 – \$323,241	\$523	0.7%
Other employment	2.5	2.4	\$49,740	\$40,971 – \$146,059	\$207	0.3%
Wholesale trade	2.5	2.4	\$0	–	\$0	0.0%
<b>Earned income subtotal</b>	<b>354.2</b>	<b>201.6</b>	<b>\$13,585,245</b>	<b>\$10,963,558 – \$17,432,114</b>	<b>\$56,605</b>	<b>77.9%</b>
<b>Other income</b>						
Alaska Permanent Fund dividend		228.1	\$1,073,342	\$935,477 – \$1,255,514	\$4,472	6.2%
Social Security		64.2	\$897,509	\$570,853 – \$1,366,080	\$3,740	5.1%
Pension/retirement		35.6	\$709,318	\$325,523 – \$1,223,401	\$2,955	4.1%
Dividend/interest		4.8	\$510,891	\$0 – \$1,449,505	\$2,129	2.9%
Disability		16.6	\$221,731	\$52,353 – \$485,209	\$924	1.3%
Rental income		9.5	\$102,178	\$23,762 – \$217,663	\$426	0.6%
Native corp. dividend		119.1	\$92,949	\$64,258 – \$125,684	\$387	0.5%
Unemployment		16.6	\$53,083	\$11,491 – \$134,970	\$221	0.3%
Veterans assistance		2.4	\$42,772	\$0 – \$85,545	\$178	0.2%
Inheritance		2.4	\$40,396	\$0 – \$80,792	\$168	0.2%
Supplemental Security income		2.4	\$28,515	\$0 – \$57,030	\$119	0.2%
Food stamps		9.5	\$22,360	\$3,992 – \$48,428	\$93	0.1%
Longevity bonus		7.1	\$12,356	\$0 – \$28,277	\$51	0.1%
Fishing permit revenues		2.4	\$11,881	\$0 – \$23,762	\$50	0.1%
Heating assistance		21.4	\$8,571	\$2,939 – \$16,970	\$36	0.0%
Adult public assistance (OAA, APD)		4.8	\$7,034	\$0 – \$19,200	\$29	0.0%
Other		4.8	\$6,826	\$0 – \$20,895	\$28	0.0%
Meeting honoraria		2.4	\$1,069	\$0 – \$2,139	\$4	0.0%
CITGO fuel voucher		2.4	\$759	\$0 – \$4,682	\$3	0.0%
TANF (Temporary cash assistance for needy families)		0.0	\$0	–	\$0	0.0%
Workers' compensation/insurance		0.0	\$0	–	\$0	0.0%
Child support		0.0	\$0	–	\$0	0.0%
Foster care		0.0	\$0	–	\$0	0.0%
<b>Other income subtotal</b>		<b>230.5</b>	<b>\$3,843,542</b>	<b>\$2,857,007 – \$5,352,929</b>	<b>\$16,015</b>	<b>22.1%</b>
<b>Community income total</b>			<b>\$17,428,787</b>	<b>\$14,861,772 – \$21,543,122</b>	<b>\$72,620</b>	<b>100.0%</b>

Source ADF&G Division of Subsistence household surveys, 2015.

Note Self-employed individuals reporting a loss or \$0 income from a job, results in an estimated \$0 for earnings.



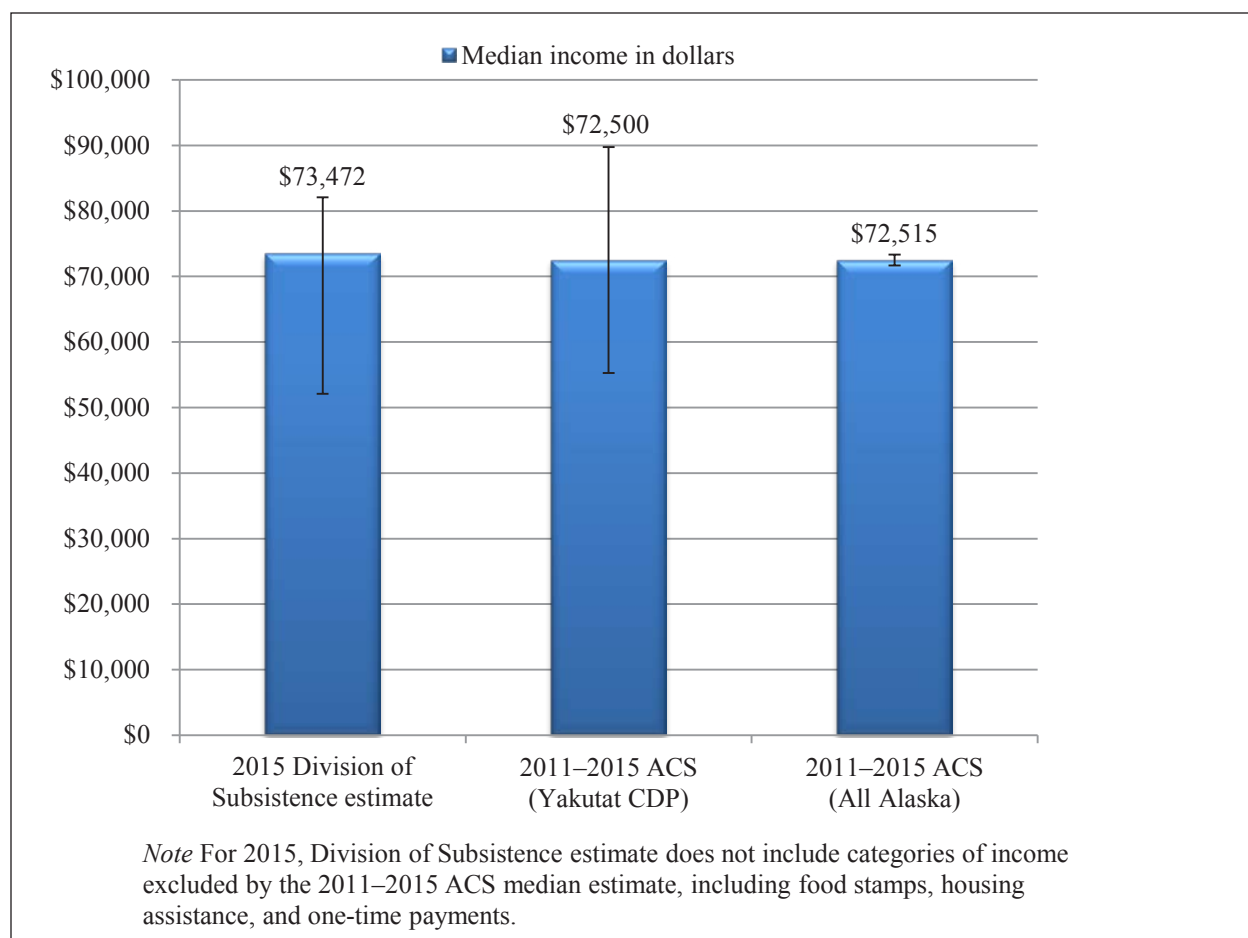


Figure 2-5.—Comparison of median household income estimates, Yakutat, 2015.

Table 2-7.—Employment by industry, Yakutat, 2015.

Industry	Jobs	Households	Individuals	Percentage of wage earnings
<b>Estimated total number</b>	<b>507.3</b>	<b>201.6</b>	<b>354.2</b>	
<b>Federal government</b>	<b>9.4%</b>	<b>20.2%</b>	<b>12.7%</b>	<b>14.1%</b>
Executive, administrative, and managerial	1.0%	2.4%	1.4%	1.8%
Natural scientists and mathematicians	1.5%	3.6%	2.1%	3.9%
Teachers, librarians, and counselors	0.5%	1.2%	0.7%	0.5%
Technologists and technicians, except health	1.0%	2.4%	1.4%	1.6%
Administrative support occupations, including clerical	1.0%	2.4%	1.4%	2.1%
Service occupations	2.0%	4.8%	2.8%	2.9%
Agricultural, forestry, and fishing occupations	0.5%	1.2%	0.7%	0.0%
Construction and extractive occupations	0.5%	1.2%	0.7%	1.3%
Handlers, equipment cleaners, helpers, and laborers	1.5%	3.6%	2.1%	0.0%
<b>State government</b>	<b>3.9%</b>	<b>8.3%</b>	<b>5.6%</b>	<b>5.2%</b>
Executive, administrative, and managerial	0.5%	1.2%	0.7%	1.5%
Technologists and technicians, except health	1.0%	2.4%	1.4%	0.5%
Administrative support occupations, including clerical	0.5%	1.2%	0.7%	0.6%
Transportation and material moving occupations	1.0%	2.4%	1.4%	1.9%
Handlers, equipment cleaners, helpers, and laborers	0.5%	1.2%	0.7%	0.0%
Occupation not indicated	0.5%	1.2%	0.7%	0.6%
<b>Local government, including tribal</b>	<b>20.2%</b>	<b>34.5%</b>	<b>27.5%</b>	<b>16.3%</b>
Executive, administrative, and managerial	2.0%	4.8%	2.8%	3.7%
Teachers, librarians, and counselors	3.9%	9.5%	5.6%	5.3%
Technologists and technicians, except health	0.5%	1.2%	0.7%	0.1%
Administrative support occupations, including clerical	3.4%	8.3%	4.9%	3.3%
Service occupations	2.0%	4.8%	2.8%	1.3%
Precision production occupations	0.5%	1.2%	0.7%	0.1%
Transportation and material moving occupations	1.0%	2.4%	1.4%	0.7%
Handlers, equipment cleaners, helpers, and laborers	5.9%	10.7%	8.5%	1.2%
Occupation not indicated	1.0%	2.4%	1.4%	0.6%
<b>Agriculture, forestry, and fishing</b>	<b>27.1%</b>	<b>42.9%</b>	<b>33.8%</b>	<b>26.2%</b>
Executive, administrative, and managerial	1.0%	2.4%	1.4%	2.4%
Technologists and technicians, except health	1.0%	1.2%	1.4%	0.9%
Service occupations	0.5%	1.2%	0.7%	0.8%
Agricultural, forestry, and fishing occupations	23.6%	41.7%	31.0%	21.0%
Precision production occupations	0.5%	1.2%	0.7%	0.8%
Occupation not indicated	0.5%	1.2%	0.7%	0.4%
<b>Mining</b>	<b>0.5%</b>	<b>1.2%</b>	<b>0.7%</b>	<b>1.8%</b>
Executive, administrative, and managerial	0.5%	1.2%	0.7%	1.8%
<b>Construction</b>	<b>3.0%</b>	<b>7.1%</b>	<b>4.2%</b>	<b>1.7%</b>
Construction and extractive occupations	2.0%	4.8%	2.8%	0.9%
Transportation and material moving occupations	1.0%	2.4%	1.4%	0.8%
<b>Manufacturing</b>	<b>2.5%</b>	<b>4.8%</b>	<b>2.8%</b>	<b>0.9%</b>
Writers, artists, entertainers, and athletes	2.5%	4.8%	2.8%	0.9%
<b>Transportation, communication, and utilities</b>	<b>5.9%</b>	<b>14.3%</b>	<b>8.5%</b>	<b>8.0%</b>
Writers, artists, entertainers, and athletes	0.5%	1.2%	0.7%	0.1%
Administrative support occupations, including clerical	1.0%	2.4%	1.4%	0.7%

-continued-

Table 2-8.—Page 2 of 2.

Industry	Jobs	Households	Individuals	Percentage of wage earnings
<b>Transportation, communication, and utilities, continued</b>				
Precision production occupations	0.5%	1.2%	0.7%	0.8%
Transportation and material moving occupations	3.4%	8.3%	4.9%	6.3%
Handlers, equipment cleaners, helpers, and laborers	0.5%	1.2%	0.7%	0.1%
<b>Wholesale trade</b>	<b>0.5%</b>	<b>1.2%</b>	<b>0.7%</b>	<b>0.0%</b>
Executive, administrative, and managerial	0.5%	1.2%	0.7%	0.0%
<b>Retail trade</b>	<b>6.9%</b>	<b>16.7%</b>	<b>9.9%</b>	<b>5.4%</b>
Executive, administrative, and managerial	1.5%	3.6%	2.1%	1.8%
Marketing and sales occupations	1.0%	2.4%	1.4%	0.8%
Administrative support occupations, including clerical	1.0%	2.4%	1.4%	0.7%
Service occupations	2.0%	4.8%	2.8%	0.9%
Handlers, equipment cleaners, helpers, and laborers	1.5%	3.6%	2.1%	1.1%
<b>Services</b>	<b>19.7%</b>	<b>38.1%</b>	<b>26.8%</b>	<b>20.1%</b>
Executive, administrative, and managerial	4.4%	8.3%	6.3%	7.4%
Registered nurses, pharmacists, dietitians, therapists, and physician assistants	1.0%	2.4%	1.4%	1.7%
Health technologists and technicians	0.5%	1.2%	0.7%	0.6%
Technologists and technicians, except health	0.5%	1.2%	0.7%	0.3%
Administrative support occupations, including clerical	1.5%	3.6%	2.1%	0.9%
Service occupations	6.9%	13.1%	9.2%	7.0%
Agricultural, forestry, and fishing occupations	1.0%	2.4%	1.4%	0.3%
Mechanics and repairers	1.0%	2.4%	1.4%	0.8%
Transportation and material moving occupations	1.0%	2.4%	1.4%	0.3%
Handlers, equipment cleaners, helpers, and laborers	1.5%	3.6%	2.1%	0.7%
Occupation not indicated	0.5%	1.2%	0.7%	0.1%
<b>Industry not indicated</b>	<b>0.5%</b>	<b>1.2%</b>	<b>0.7%</b>	<b>0.4%</b>
Service occupations	0.5%	1.2%	0.7%	0.4%

Source ADF&G Division of Subsistence household surveys, 2016.

Table 2-8.—Job schedules, Yakutat, 2015.

Schedule	Jobs		Employed persons		Employed households	
	Number	Percentage	Number	Percentage	Number	Percentage
Full time	287.4	56.7%	254.4	71.8%	158.4	78.6%
Part time	127.5	25.1%	104.7	29.6%	81.6	40.5%
Shift	2.5	0.5%	2.5	0.7%	2.4	1.2%
On-call (occasional)	72.5	14.3%	54.9	15.5%	43.2	21.4%
Part-time shift	5.0	1.0%	5.0	1.4%	4.8	2.4%
Schedule not reported	12.5	2.5%	7.5	2.1%	7.2	3.6%

Source ADF&G Division of Subsistence household surveys, 2016.

Note Respondents who had more than 1 job in the study year could provide multiple responses, so the percentages may sum to more than 100%.

Table 2-9.—Employment characteristics, Yakutat, 2015.

Characteristic	Community
	Yakutat
<b>All adults</b>	
Number	452.3
Mean weeks employed	33.1
<b>Employed adults</b>	
Number	354.2
Percentage	78.3%
Jobs	
Number	507.3
Mean	1.4
Minimum	1
Maximum	3
Months employed	
Mean	9.8
Minimum	2
Maximum	12
Percentage employed year-round	62.1%
Mean weeks employed	42.3
<b>Households</b>	
Number	240.0
Employed	
Number	201.6
Percentage	84.0%
Jobs per employed household	
Mean	2.5
Minimum	1
Maximum	7
Employed adults	
Mean	
Employed households	1.8
Total households	1.5
Minimum	1
Maximum	5
Mean person-weeks of employment	62.4

Source ADF&G Division of Subsistence household surveys, 2016.

## FOOD SECURITY

Survey respondents were asked a set of questions intended to assess their household's food security, defined as, "access by all people at all times to enough food for an active, healthy life" (Coleman-Jensen et al. 2012). The food security questions were modeled after those developed by the U.S. Department of Agriculture (USDA) but modified by ADF&G to account for differences in access to subsistence and store-bought foods. Based on their responses to these questions, households were broadly categorized as being food secure or food insecure following a USDA protocol (Bickel et al. 2000). Food secure households were broken down further into 2 subcategories—high or marginal food security. Food insecure households were divided into 2 subcategories—low food security or very low food security.

Households with high food security did not report any food access problems or limitations. Households with marginal food security reported 1 or 2 instances of food access problems or limitations—typically anxiety over food sufficiency or a shortage of particular foods in the house—but gave little or no indication of changes in diets or food intake. Households with low food security reported reduced quality, variety, or desirability of their diet, but they, too, gave little indication of reduced food intake. Households classified as having very low food security were those that reported multiple instances of disrupted eating patterns and reduced food intake (Coleman-Jensen et al. 2012).

Core questions and responses from Yakutat residents are summarized in Figure 2-6. Most of the questions about food security issues garnered low affirmative response rates from households. The first 5 responses in the figure were asked about the overall household; the last 5 questions were only asked of households that responded affirmatively to previous questions and only referenced the adults in the household. A low proportion of the estimated households (9%) indicated that at some point in the year, their store-bought food did not last and they could not get more, but when considering all their food sources, 16% of households indicated that this statement was ever true in 2015. Subsistence foods are an important component of food security for Yakutat households; one-third of households indicated that at some point in the year their subsistence foods ran out and they could not get more. Another statement that garnered the most affirmative responses (21% of households) was that the household lacked the resources needed to get food. In this question, resources were defined as what the household needed to hunt, fish, gather, or buy food. There were 14% of households that worried about having enough food. Yakutat is a remote community with high costs of living. Combined with a seasonal workforce, access to sufficient store-bought foods can be a challenge. No more than 10% of estimated households agreed with any of the other food insecurity statements.

Food security results for surveys for Yakutat, the state of Alaska, and the United States are summarized in Figure 2-7. Yakutat households were slightly more food secure than households overall in the state of Alaska and than households in the nation. Looking just at the food insecure households, Yakutat has a slightly lower percentage of households with low food security (7%) compared to the state (8%) or the nation (8%) and a similar percentage of households with very low food security (4%) as the state (4%), which was slightly lower than for the nation (5%).

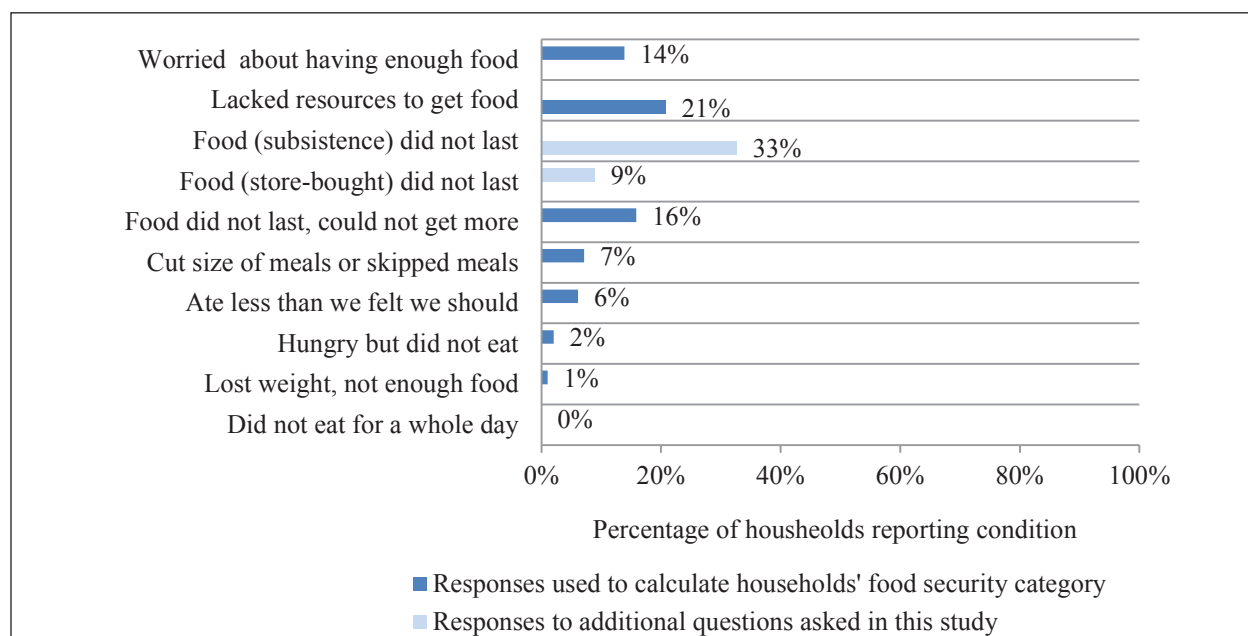


Figure 2-6.—Responses to questions about food insecure conditions, Yakutat, 2015.

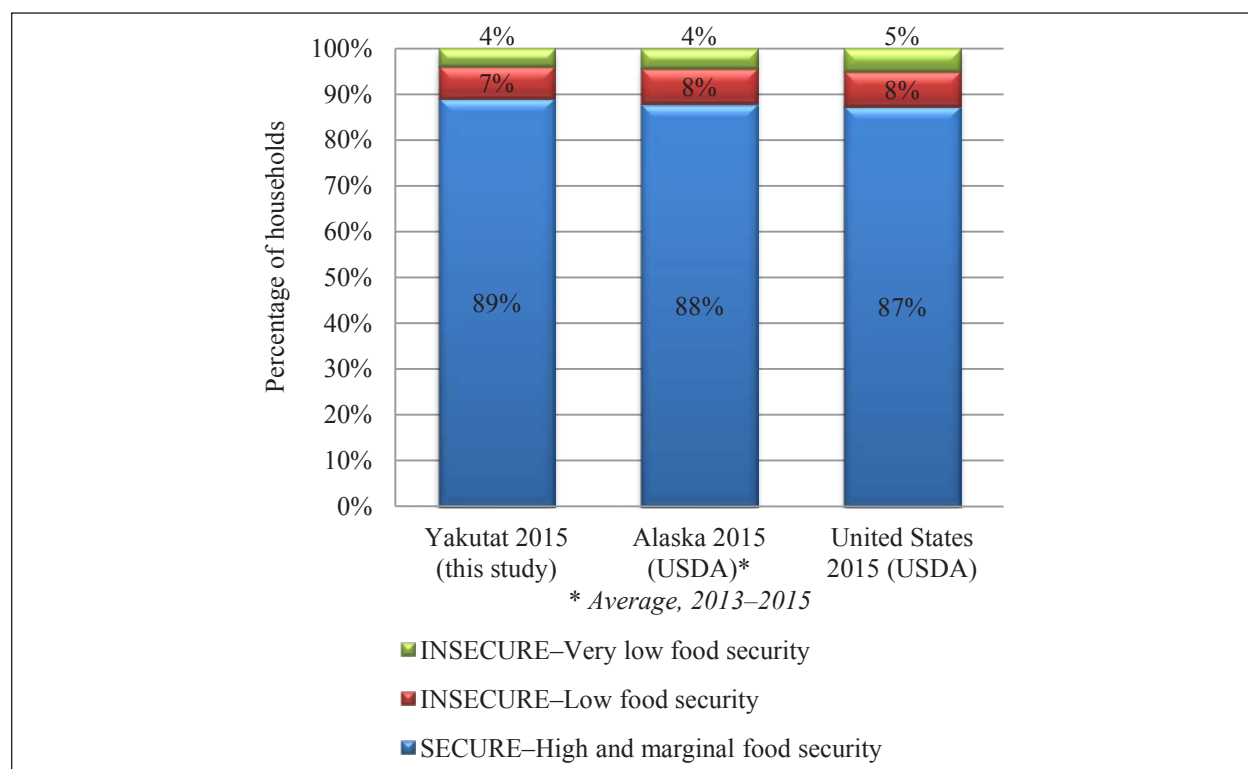


Figure 2-7.—Comparison of food security categories, Yakutat, Alaska, and United States, 2015.

Figure 2-8 portrays the mean number of food insecure conditions per household by food security category by month. Figure 2-9 shows which months households reported foods not lasting. For food secure households, there was very little change in security throughout the year (Figure 2-8). Food secure households are those that have access to enough subsistence resources or have an economic situation that allows them to purchase needed food, so it is not surprising that there was not much food security variation over the course of a year for these households. For households with low food security, a more seasonal trend is apparent, with food insecure conditions peaking in the winter months of November through February. Households with very low food security exhibit a similar, but more exaggerated, pattern to low food-secure households. These households experienced the highest number of food insecure conditions in November, but showed dips to no such conditions in March and September. For the remaining months of the year, households experienced about the same number of food insecure conditions. The seasonal trend displayed by the low food-secure households generally follows the availability of subsistence resources. Winter is a lean time of year with few wild resources available, but as the weather warms up, more resources steadily become available and accessible to households, either through harvest or through sharing networks. The bounty lasts through the summer, but resources start becoming scarcer through the fall back into the winter.

The important contribution of subsistence foods to the food security of Yakutat households is highlighted in Figure 2-9. Over the course of the year, there is only slight change in the estimated percentage of households experiencing store-bought foods not lasting, fluctuating between 1 and 4%. The estimated percentage of households with subsistence foods not lasting did fluctuate over the course of the year. The highest estimated percentage of households with subsistence foods not lasting occurred in February, before dropping to the lowest percentage in March. Similar percentages of households indicated foods not lasting for the remaining months of the year, varying from 14% in January and May to 11% in November. The availability of subsistence foods drives the trend for overall foods not lasting.



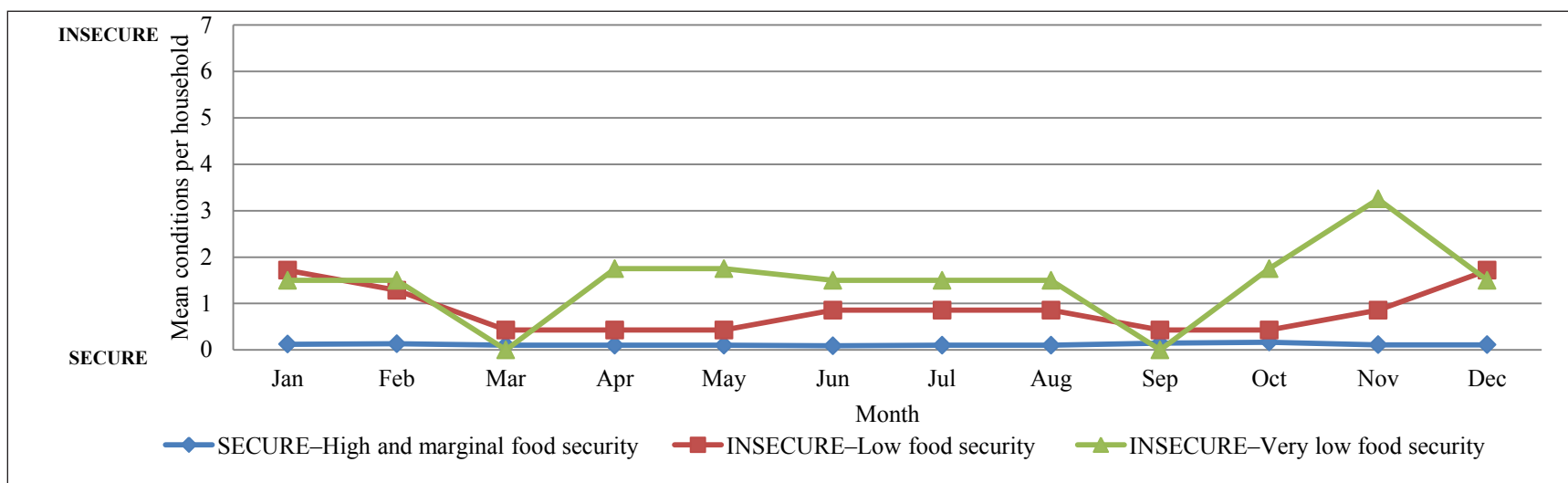


Figure 2-8.—Mean number of food insecure conditions by month and by household food security category, Yakutat, 2015.

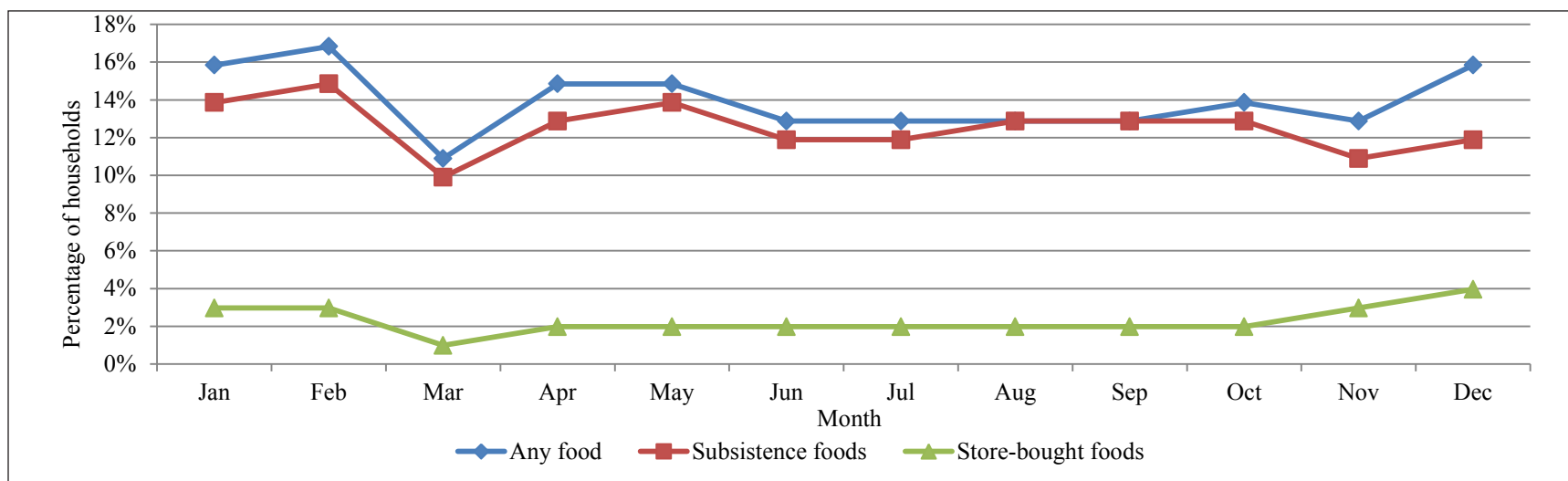


Figure 2-9.—Comparison of months when food did not last, Yakutat, 2015.

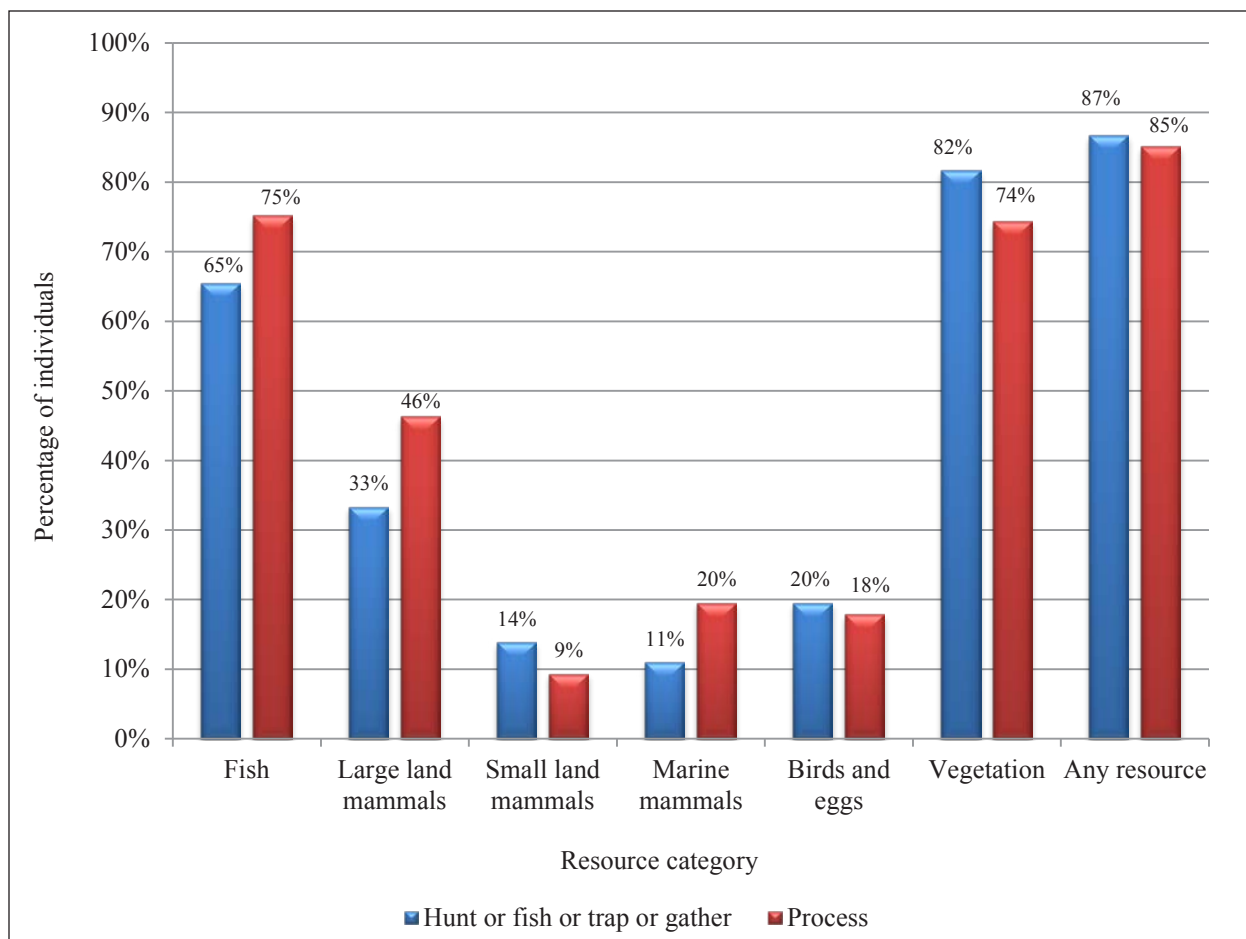


Figure 2-10.—Individual participation in subsistence harvesting and processing activities, Yakutat, 2015.

## SUMMARY OF HARVEST AND USE PATTERNS

### Individual Participation in the Harvesting and Processing of Wild Resources

Figure 2-10 reports the expanded levels of individual participation in the harvest and processing of wild resources by all Yakutat residents in 2015 (see also Appendix Table E-5). At 82%, more individuals participated in the harvest of vegetation than any other resource category. The next highest participation was seen in the harvest of fish, where 65% of individuals participated. Smaller percentages of people harvested large land mammals (33%), birds and eggs (20%), small land mammals (14%), and marine mammals (11%). For one-half of the resource categories, more people were involved in the processing than in the harvesting activities. For fish, 75% of individuals participated in processing harvests, 46% of individuals helped process large land mammals, 20% participated in the processing of marine mammals, 18% for birds and eggs, and only 9% for small land mammals. Large land mammals and marine mammals have labor-intensive processing that usually involves a greater number of people than the harvest does. Fish are often shared whole, leaving it up to the recipient to process in their preferred method. Vegetation is unlike these resources—berry picking is often a family affair, but the processing and making of jams, jellies, or pies entails the work of fewer household members, as can be seen with only 74% of individuals processing these resources.

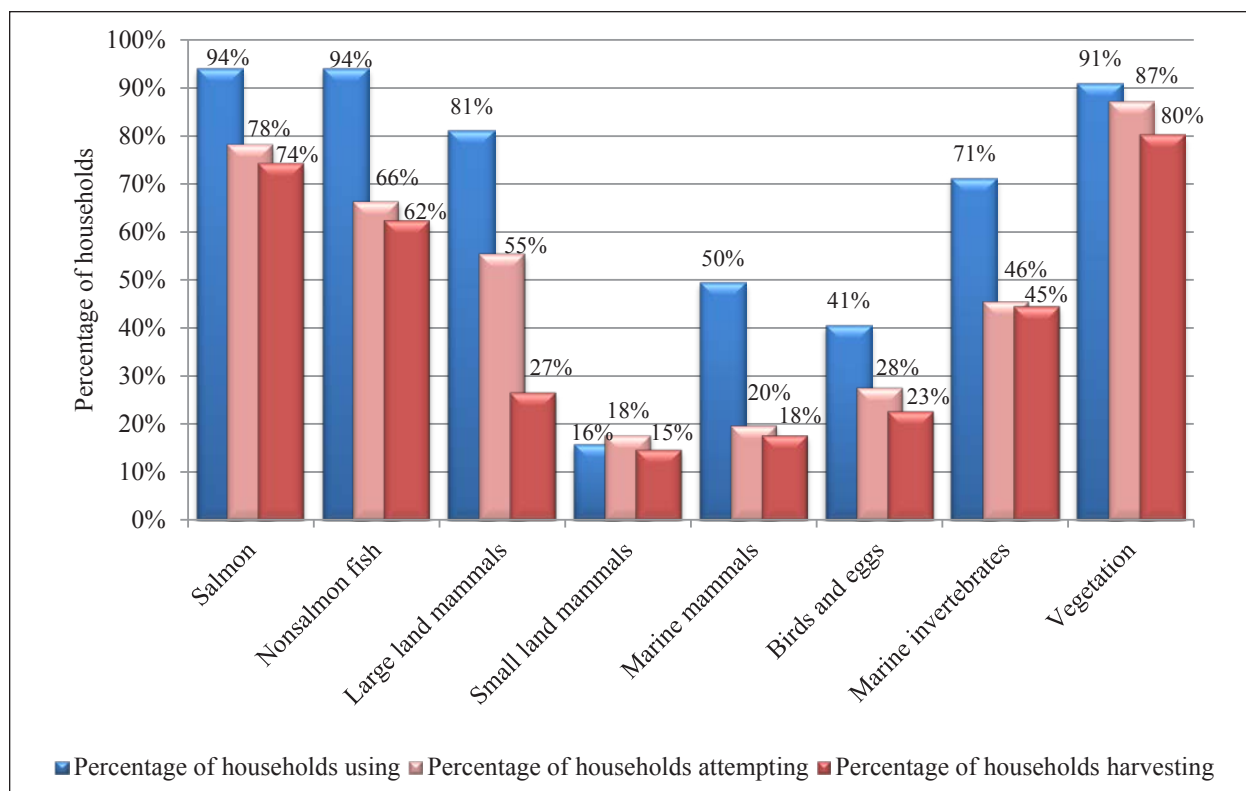


Figure 2-11.—Percentage of households using, attempting to harvest, and harvesting wild resources, by resource category, Yakutat, 2015.

### Harvest and Use of Wild Resources at the Household Level

Figure 2-11 shows by resource category the percentages of households that used wild resources, attempted to harvest, and harvested wild resources. For every category, more households used a resource than harvested it, indicating the extent of sharing that occurs in Yakutat. For most resource categories, households that attempted to harvest a resource were successful. The largest disparity in these 2 percentages is seen with large land mammals, where 55% of households attempted to harvest but only 27% of households were successful. Moose is the main species targeted within this category and competition for the resource is high in the more accessible hunting areas around Yakutat.

The survey included questions about participation in making handicrafts using locally harvested or collected natural materials. Small percentages of responding households made handicrafts out of natural materials; for those who did, animal hides were the most common material used (Figure 2-12). Other materials used in handicrafts included wood, roots, bear claws, antlers, bones, and bark. The hides of marine mammals, mainly seals and sea otters, were used in hats, mittens, and other outerwear. While approximately 10% of households participated in making handicrafts, it was mostly a noncommercial activity. Slightly less than 4% of households sold their handicrafts. Most of the households who made handicrafts harvested the materials themselves, the remaining households either purchased the harvested materials or were gifted them.

Table 2-10 summarizes resource harvest and use characteristics for Yakutat in 2015 at the household level. The average harvest was 646 lb usable weight per household. During the study year, community households harvested an average of 11 kinds of resources and used an average of 17 kinds of resources. The maximum number of resources used by any household was 51. In addition, households gave away an average of 7 kinds of resources and received an average of 8 kinds.

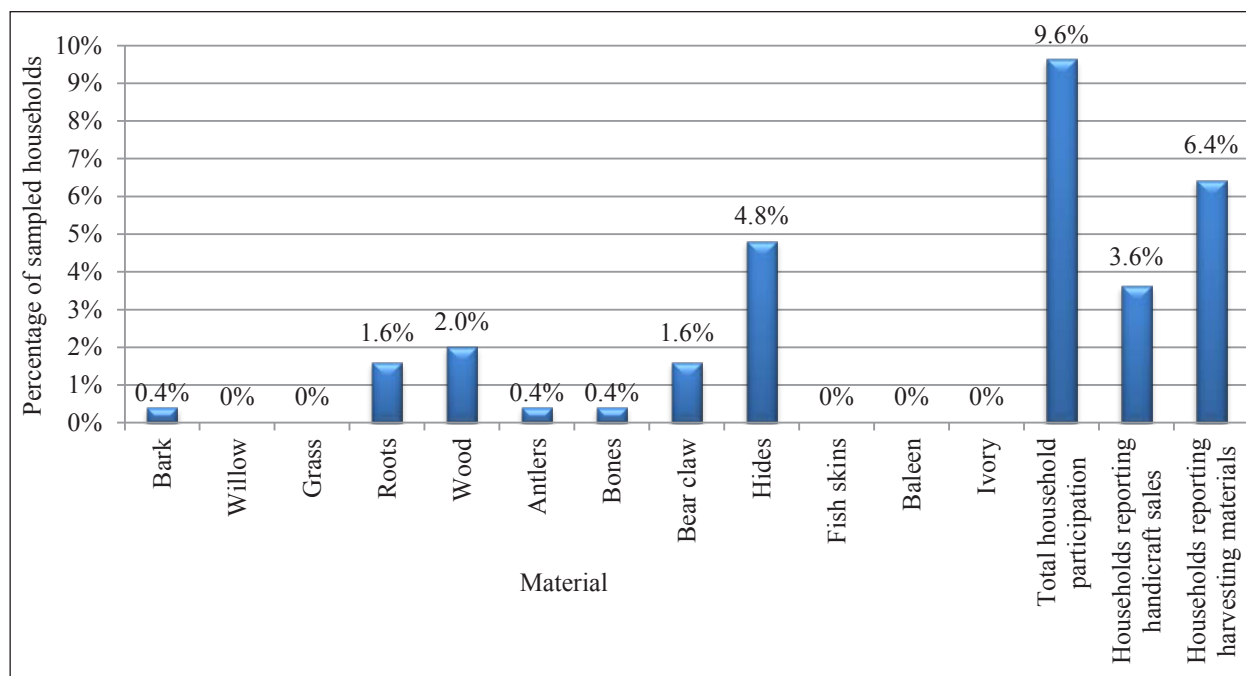


Figure 2-12.—Household participation in subsistence craft activities, by natural material used, and craft sales, Yakutat, 2015.

Table 2-10.—Resource harvest and use characteristics, Yakutat, 2015.

Characteristic	
<b>Mean number of resources used per household</b>	<b>16.9</b>
Minimum	0.0
Maximum	51.0
95% confidence limit ( $\pm$ )	9.5%
Median	15
<b>Mean number of resources attempted to harvest per household</b>	<b>12.6</b>
Minimum	0.0
Maximum	44.0
95% confidence limit ( $\pm$ )	12.3%
Median	11
<b>Mean number of resources harvested per household</b>	<b>11.4</b>
Minimum	0.0
Maximum	44.0
95% confidence limit ( $\pm$ )	13.0%
Median	9
<b>Mean number of resources received per household</b>	<b>8.3</b>
Minimum	0.0
Maximum	32.0
95% confidence limit ( $\pm$ )	10.8%
Median	7
<b>Mean number of resources given away per household</b>	<b>7.2</b>
Minimum	0.0
Maximum	47.0
95% confidence limit ( $\pm$ )	17.6%
Median	5
<b>Household harvest (pounds)</b>	
Minimum	0.0
Maximum	5,047.5
Mean	645.7
Median	342
Total harvest weight (lb)	154,977.3
Community per capita harvest (lb)	261.9
Percentage using any resource	99.0%
Percentage attempting to harvest any resource	95.0%
Percentage harvesting any resource	93.1%
Percentage receiving any resource	97.0%
Percentage giving away any resource	87.1%
Number of households in sample	101.0
Number of resources asked about and identified voluntarily by respondents	169.0

Source ADF&G Division of Subsistence household surveys, 2016.

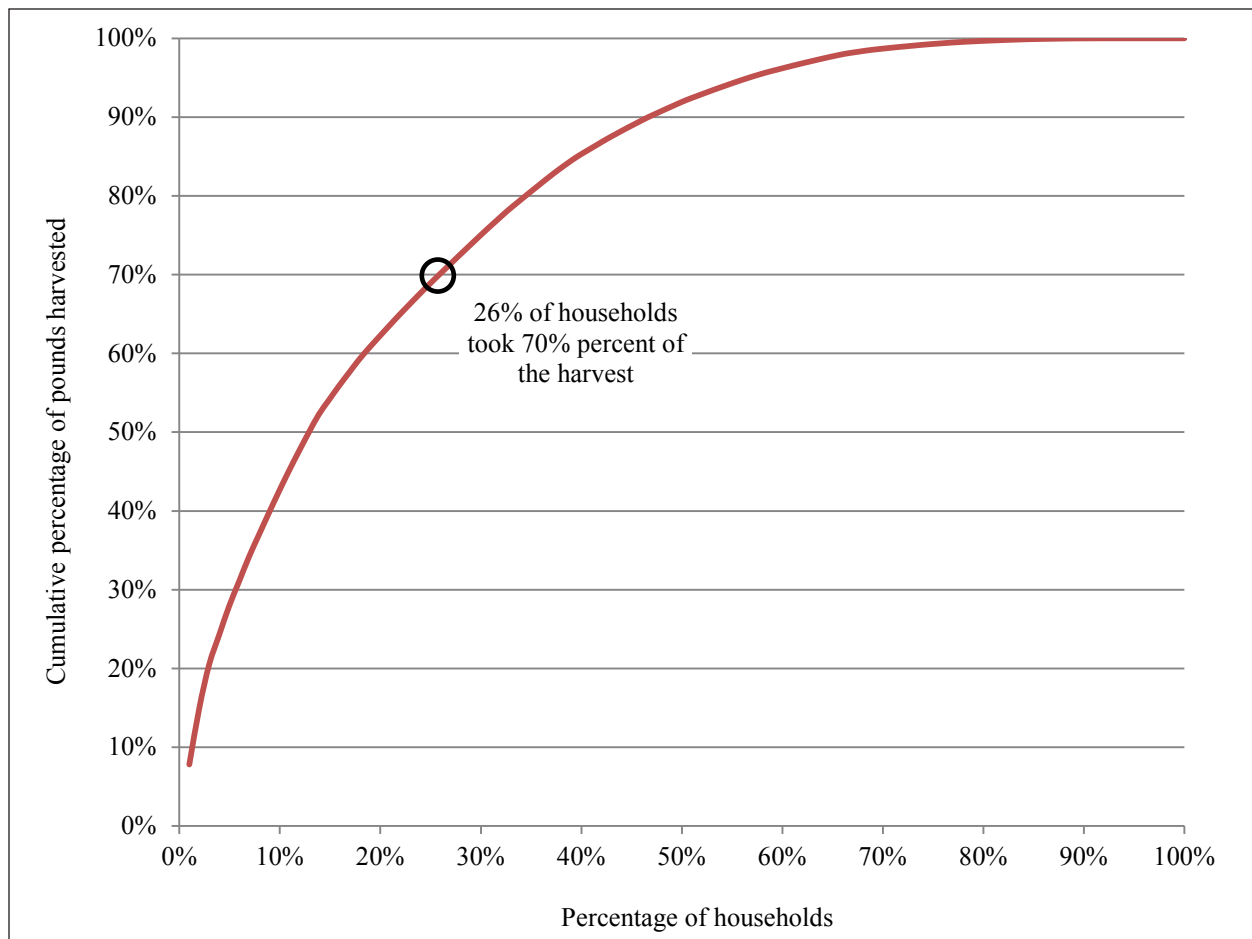


Figure 2-13.—Household specialization, Yakutat, 2015.

## SHARING OF WILD RESOURCES

### Household Specialization in Resource Harvesting

Previous studies (Wolfe 1987; Wolfe et al. 2010) have shown that in most rural Alaska communities, a relatively small portion of households produces most of the community's fish and wildlife harvests, which they share with other households. A recent study of 3,265 households in 66 rural Alaska communities found that about 33% of the households accounted for 76% of subsistence harvests (Wolfe et al. 2010). Although overall the set of very productive households was diverse, factors that were associated with higher levels of subsistence harvests included larger households with a pool of adult male labor, higher wage income, involvement in commercial fishing, and community location.

As shown in Figure 2-13, in the 2015 study year in Yakutat, about 70% of the harvests of wild resources as estimated in pounds usable weight were harvested by 26% of the community's households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Yakutat.

## HARVEST QUANTITIES AND COMPOSITION

Table 2-11 reports estimated wild resource harvests and uses by Yakutat residents in 2015 and is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see Appendix D for conversion factors<sup>2</sup>). The harvest category includes resources harvested by any member of the surveyed household during the study year. The use category includes all resources taken, given away, or used by a household, and resources acquired from other harvesters, either as gifts, by barter or trade, through hunting partnerships, or as meat given by hunting guides and non-local hunters. Purchased foods are not included, but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

In 2015, Yakutat residents harvested an estimated 154,977 lb of wild resources. Salmon composed the largest portion with 35% of the overall harvest (54,794 lb; 93 lb per capita) (Figure 2-14; Table 2-11). Representing 18% of the harvest each, large land mammals (28,400 lb; 48 lb per capita) and nonsalmon fish (27,796 lb; 47 lb per capita) contributed the next largest percentages. With an estimated harvest of 19,295 lb (33 lb per capita), marine mammals composed 12% of the harvest. The other resource categories each contributed less than 10% to the total estimated harvest: 9% was from vegetation (14,553 lb; 25 lb per capita), marine invertebrates contributed 5% (6,926 lb; 12 lb per capita), then birds and eggs at 2% (2,357 lb; 4 lb per capita), and small land mammals at 1% (856 lb; 1 lb per capita).

## SEASONAL ROUND

After a long and cold winter, spring heralds the beginning of the return of abundant resources around Yakutat. Some fish, like Pacific halibut, Chinook salmon, or most marine invertebrates can be harvested year-round in Yakutat. Eulachon (locally called “hooligan”) is one of the first fish species to arrive in the spring, usually sometime between February and May, and usually heading to either the Situk or Alsek rivers. Eulachon are an important fish to area residents. One elder explained the traditional response to the arrival of hooligan each spring in the vicinity of Dry Bay:

They would have a watch out for the sea lions and the seals coming. When they see that they know that the hooligans are coming. They won't follow the hooligan, they come before them and they wait. They'll say okay the hooligans are on their way so let's get ready. When they do show up it is such a real big treat because they had been living on dry fish and fish that they had put away in the fall all winter. Now this is going to be their first fresh fish that they are going to taste in the spring. It also means that the spring is coming and so we have an elder here that tells a story about when the hooligan start coming. That the little villages have a way of communicating with one another . . . . They start putting on their regalia and they start drumming and dancing out of their dwellings and singing. And everyone is kind of eventually doing it all at one time all the way from Akwe down to Dry Bay. I don't know how many villages but they would all be drumming and singing. This elder would say that the drumming and singing would be so loud that you could hear the ground shake. There is a place there in the Dry Bay area called Shaking Ground.

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2. Resources that are not eaten, such as firewood and some furbearers, are included in the table but are given a conversion factor of zero.



Table 2-11.—Estimated use and harvest of fish, game, and vegetation resources, Yakutat, 2015.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount <sup>a</sup>			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
<b>All resources</b>	<b>99.0</b>	<b>95.0</b>	<b>93.1</b>	<b>97.0</b>	<b>87.1</b>	<b>154,977.3</b>	<b>645.7</b>	<b>261.9</b>	<b>154,977.3 lb</b>		<b>645.7</b>	<b>21.2</b>
<b>Salmon</b>	<b>94.1</b>	<b>78.2</b>	<b>74.3</b>	<b>73.3</b>	<b>61.4</b>	<b>54,794.3</b>	<b>228.3</b>	<b>92.6</b>	<b>54,794.3 lb</b>		<b>228.3</b>	<b>22.5</b>
Chum salmon	3.0	3.0	3.0	1.0	1.0	505.8	2.1	0.9	80.8 ind		0.3	133.4
Coho salmon	64.4	54.5	52.5	23.8	40.6	15,438.1	64.3	26.1	3,500.7 ind		14.6	31.1
Chinook salmon	79.2	53.5	48.5	56.4	39.6	10,086.0	42.0	17.0	1,392.5 ind		5.8	30.3
Pink salmon	19.8	16.8	16.8	5.0	7.9	1,406.5	5.9	2.4	501.7 ind		2.1	48.1
Sockeye salmon	83.2	66.3	62.4	44.6	47.5	27,077.8	112.8	45.8	8,392.6 ind		35.0	26.0
Unknown salmon	2.0	1.0	1.0	1.0	0.0	280.2	1.2	0.5	71.3 ind		0.3	151.0
<b>Nonsalmon fish</b>	<b>94.1</b>	<b>66.3</b>	<b>62.4</b>	<b>84.2</b>	<b>57.4</b>	<b>27,795.8</b>	<b>115.8</b>	<b>47.0</b>	<b>27,795.8 lb</b>		<b>115.8</b>	<b>25.1</b>
Pacific herring	11.9	7.9	7.9	5.0	5.0	3,150.9	13.1	5.3	525.1 gal		2.2	114.6
Pacific herring roe/unspecified	1.0	1.0	1.0	0.0	0.0	16.6	0.1	0.0	2.4 gal		0.0	151.0
Pacific herring spawn on kelp	2.0	2.0	2.0	0.0	1.0	85.5	0.4	0.1	12.2 gal		0.1	146.8
Pacific herring roe on hair seaweed	2.0	2.0	2.0	0.0	1.0	85.5	0.4	0.1	12.2 gal		0.1	146.8
Pacific herring roe on hemlock branches	45.5	7.9	7.9	40.6	16.8	1,877.3	7.8	3.2	476.5 gal		2.0	97.2
Eulachon (hooligan, candlefish)	44.6	22.8	21.8	31.7	21.8	3,168.7	13.2	5.4	528.1 gal		2.2	40.8
Silver smelt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Pacific (gray) cod	6.9	2.0	2.0	5.0	3.0	15.2	0.1	0.0	4.8 ind		0.0	75.5
Pacific tomcod	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown flounder	1.0	1.0	1.0	0.0	0.0	4.8	0.0	0.0	1.6 ind		0.0	151.0
Lingcod	21.8	15.8	14.9	9.9	8.9	760.4	3.2	1.3	190.1 ind		0.8	55.5
Rock greenling	2.0	2.0	1.0	0.0	1.0	9.5	0.0	0.0	9.5 ind		0.0	151.0
Pacific halibut	90.1	56.4	49.5	66.3	46.5	16,214.6	67.6	27.4	16,214.6 lb		67.6	25.8
Black rockfish	13.9	11.9	9.9	3.0	5.9	777.0	3.2	1.3	518.0 ind		2.2	76.7
Yelloweye rockfish	9.9	5.9	5.9	4.0	5.9	660.6	2.8	1.1	220.2 ind		0.9	110.7
Dusky rockfish	1.0	1.0	1.0	0.0	1.0	14.3	0.1	0.0	14.3 ind		0.1	151.0
Copper rockfish	1.0	1.0	1.0	0.0	0.0	38.0	0.2	0.1	9.5 ind		0.0	151.0
China rockfish	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown rockfish	2.0	0.0	0.0	2.0	1.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Sablefish (black cod)	14.9	5.0	5.0	11.9	7.9	414.4	1.7	0.7	133.7 ind		0.6	92.6
Red Irish lord	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown sculpin	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Dogfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Skates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Brook trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Dolly Varden	7.9	6.9	6.9	1.0	2.0	193.0	0.8	0.3	137.8 ind		0.6	85.4
Arctic grayling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Cutthroat trout	10.9	9.9	8.9	2.0	2.0	193.0	0.8	0.3	137.8 ind		0.6	62.4
Rainbow trout	2.0	2.0	2.0	0.0	1.0	29.9	0.1	0.1	21.4 ind		0.1	135.1
Steelhead	5.9	7.9	5.9	1.0	2.0	86.5	0.4	0.1	61.8 ind		0.3	74.6

-continued-

Table 2-11.—Page 2 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount <sup>a</sup>		95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	
<b>Large land mammals</b>	<b>81.2</b>	<b>55.4</b>	<b>26.7</b>	<b>72.3</b>	<b>35.6</b>	<b>28,400.3</b>	<b>118.3</b>	<b>48.0</b>	<b>28,400.3 lb</b>	<b>118.3</b>	<b>29.0</b>
Bison	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0 ind	0.0	0.0
Black bear	13.9	9.9	6.9	7.9	5.0	964.8	4.0	1.6	16.6 ind	0.1	55.3
Brown bear	1.0	3.0	1.0	0.0	0.0	335.0	1.4	0.6	2.4 ind	0.0	151.0
Caribou	3.0	0.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0 ind	0.0	0.0
Deer	44.6	34.7	8.9	36.6	13.9	1,437.1	6.0	2.4	33.3 ind	0.1	59.4
Mountain goat	5.0	0.0	0.0	5.0	4.0	0.0	0.0	0.0	0.0 ind	0.0	0.0
Moose	75.2	48.5	19.8	64.4	31.7	25,663.4	106.9	43.4	47.5 ind	0.2	30.4
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind	0.0	0.0
<b>Small land mammals</b>	<b>15.8</b>	<b>17.8</b>	<b>14.9</b>	<b>2.0</b>	<b>5.9</b>	<b>855.7</b>	<b>3.6</b>	<b>1.4</b>	<b>855.7 lb</b>	<b>3.6</b>	<b>61.0</b>
Beaver	3.0	3.0	2.0	0.0	0.0	207.9	0.9	0.4	23.8 ind	0.1	124.2
Coyote	1.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	2.4 ind	0.0	151.0
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind	0.0	0.0
Snowshoe hare	11.9	13.9	11.9	1.0	4.0	628.8	2.6	1.1	314.4 ind	1.3	70.0
North American river (land) otter	2.0	2.0	2.0	1.0	0.0	0.0	0.0	0.0	9.5 ind	0.0	119.0
Lynx	1.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0	2.4 ind	0.0	151.0
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind	0.0	0.0
Marten	5.9	5.9	5.9	0.0	2.0	0.0	0.0	0.0	389.7 ind	1.6	68.9
Mink	2.0	3.0	2.0	0.0	0.0	0.0	0.0	0.0	48.0 ind	0.2	150.2
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind	0.0	0.0
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind	0.0	0.0
Red (tree) squirrel	1.0	1.0	1.0	0.0	0.0	19.0	0.1	0.0	38.0 ind	0.2	151.0
Weasel	2.0	2.0	2.0	0.0	1.0	0.0	0.0	0.0	26.1 ind	0.1	126.3
Gray wolf	2.0	4.0	1.0	0.0	0.0	0.0	0.0	0.0	4.8 ind	0.0	151.0
Wolverine	2.0	2.0	2.0	0.0	1.0	0.0	0.0	0.0	9.5 ind	0.0	119.0
<b>Marine mammals</b>	<b>49.5</b>	<b>19.8</b>	<b>17.8</b>	<b>41.6</b>	<b>18.8</b>	<b>19,295.0</b>	<b>80.4</b>	<b>32.6</b>	<b>19,295.0 lb</b>	<b>80.4</b>	<b>84.6</b>
Fur seal	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0 ind	0.0	0.0
Harbor seal	44.6	15.8	13.9	38.6	14.9	19,295.0	80.4	32.6	344.6 ind	1.4	84.6
Unknown seal oil	2.0	0.0	0.0	2.0	1.0						
Sea otter	10.9	8.9	8.9	3.0	5.0	0.0	0.0	0.0	349.3 ind	1.5	80.9
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind	0.0	0.0
Unknown whale	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0 ind	0.0	0.0
<b>Birds and eggs</b>	<b>40.6</b>	<b>27.7</b>	<b>22.8</b>	<b>25.7</b>	<b>13.9</b>	<b>2,357.4</b>	<b>9.8</b>	<b>4.0</b>	<b>2,357.4 lb</b>	<b>9.8</b>	<b>81.5</b>
Canvasback	1.0	1.0	1.0	0.0	0.0	4.0	0.0	0.0	2.4 ind	0.0	151.0
Unknown goldeneye	1.0	1.0	1.0	0.0	0.0	15.4	0.1	0.0	11.9 ind	0.0	151.0
Mallard	19.8	11.9	11.9	9.9	6.9	498.1	2.1	0.8	311.3 ind	1.3	54.7
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind	0.0	0.0
Northern pintail	4.0	4.0	4.0	0.0	1.0	122.6	0.5	0.2	102.2 ind	0.4	91.1

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Table 2-11.—Page 3 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount <sup>a</sup>			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
<b>Birds and eggs, continued</b>												
Unknown scaup	1.0	1.0	1.0	0.0	0.0	16.6	0.1	0.0	11.9 ind		0.0	151.0
Unknown teal	10.9	9.9	9.9	1.0	4.0	167.5	0.7	0.3	335.0 ind		1.4	73.3
Unknown wigeon	5.9	5.0	5.0	1.0	2.0	237.9	1.0	0.4	216.2 ind		0.9	91.0
Unknown ducks	3.0	3.0	1.0	1.0	1.0	11.1	0.0	0.0	11.9 ind		0.0	151.0
Dusky Canada goose	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown Canada/cackling geese	8.9	5.9	5.9	3.0	2.0	299.4	1.2	0.5	106.9 ind		0.4	84.0
Snow goose	1.0	1.0	1.0	0.0	1.0	99.8	0.4	0.2	35.6 ind		0.1	151.0
White-fronted goose	2.0	2.0	2.0	0.0	1.0	220.5	0.9	0.4	76.0 ind		0.3	141.8
Unknown geese	2.0	2.0	1.0	1.0	1.0	3.4	0.0	0.0	9.5 ind		0.0	151.0
Unknown swans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Sandhill crane	8.9	4.0	3.0	6.9	2.0	428.2	1.8	0.7	80.8 ind		0.3	133.6
Common snipe	1.0	1.0	1.0	0.0	0.0	0.4	0.0	0.0	11.9 ind		0.0	151.0
Black oystercatcher	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown shorebirds	1.0	1.0	1.0	0.0	0.0	0.2	0.0	0.0	11.9 ind		0.0	151.0
Unknown loon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown seabirds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown grouse	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown ptarmigan	3.0	4.0	3.0	0.0	3.0	127.4	0.5	0.2	159.2 ind		0.7	103.4
Unknown other birds	1.0	2.0	1.0	0.0	1.0	3.0	0.0	0.0	7.1 ind		0.0	151.0
Mallard eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown duck eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown Canada/cackling goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown swan eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown crane eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Black oystercatcher eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Glaucous-winged gull eggs	11.9	4.0	3.0	10.9	3.0	39.0	0.2	0.1	194.9 ind		0.8	93.9
Unknown gull eggs	3.0	3.0	2.0	1.0	1.0	31.4	0.1	0.1	104.6 ind		0.4	106.7
Unknown tern eggs	8.9	5.9	5.9	4.0	1.0	19.1	0.1	0.0	382.6 ind		1.6	72.9
Unknown seabird eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown eggs	1.0	1.0	1.0	0.0	1.0	12.4	0.1	0.0	68.9 ind		0.3	151.0
<b>Marine invertebrates</b>	<b>71.3</b>	<b>45.5</b>	<b>44.6</b>	<b>60.4</b>	<b>34.7</b>	<b>6,925.9</b>	<b>28.9</b>	<b>11.7</b>	<b>6,925.9 lb</b>		<b>28.9</b>	<b>31.1</b>
Abalone	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Red (large) chitons	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Black (small) chitons	15.8	12.9	12.9	6.9	6.9	311.8	1.3	0.5	78.0 gal		0.3	60.8
Butter clams	18.8	14.9	14.9	10.9	9.9	560.3	2.3	0.9	186.8 gal		0.8	57.6
Horse clams	1.0	1.0	1.0	0.0	0.0	15.9	0.1	0.0	3.6 gal		0.0	151.0
Pacific littleneck clams (steamers)	16.8	15.8	15.8	6.9	5.9	510.9	2.1	0.9	170.3 gal		0.7	48.8

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Table 2-11.—Page 4 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount <sup>a</sup>			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
<b>Marine invertebrates, continued</b>												
Razor clams	3.0	2.0	2.0	1.0	1.0	185.3	0.8	0.3	61.8 gal		0.3	145.2
Unknown clams	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Unknown cockles	26.7	25.7	21.8	11.9	8.9	510.9	2.1	0.9	170.3 gal		0.7	38.8
Dungeness crab	52.5	24.8	23.8	42.6	24.8	1,512.0	6.3	2.6	2,160.0 ind		9.0	44.1
Red king crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Tanner crab	5.0	1.0	1.0	4.0	1.0	15.2	0.1	0.0	9.5 ind		0.0	151.0
Unknown crab	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Geoducks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Mussels	6.9	6.9	6.9	0.0	1.0	27.3	0.1	0.0	18.2 gal		0.1	85.5
Octopus	23.8	13.9	13.9	14.9	12.9	917.2	3.8	1.6	229.3 ind		1.0	59.0
Scallops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Weathervane scallops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Sea cucumber	2.0	1.0	1.0	2.0	1.0	47.5	0.2	0.1	23.8 gal		0.1	151.0
Green sea urchin	1.0	1.0	1.0	0.0	1.0	190.1	0.8	0.3	95.0 gal		0.4	151.0
Unknown sea urchin	4.0	3.0	3.0	2.0	3.0	4.2	0.0	0.0	32.1 gal		0.1	115.8
Shrimp	31.7	12.9	12.9	23.8	12.9	2,117.2	8.8	3.6	2,117.2 lb		8.8	56.4
Squid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
<b>Vegetation</b>	<b>91.1</b>	<b>87.1</b>	<b>80.2</b>	<b>67.3</b>	<b>66.3</b>	<b>14,552.9</b>	<b>60.6</b>	<b>24.6</b>	<b>14,552.9 lb</b>		<b>60.6</b>	<b>23.4</b>
Blueberry	59.4	60.4	58.4	16.8	20.8	2,044.2	8.5	3.5	511.0 gal		2.1	26.5
Lowbush cranberry	12.9	13.9	12.9	2.0	5.0	243.6	1.0	0.4	60.9 gal		0.3	92.0
Highbush cranberry	19.8	18.8	18.8	5.0	7.9	216.8	0.9	0.4	54.2 gal		0.2	70.4
Elderberry	2.0	2.0	2.0	1.0	0.0	23.8	0.1	0.0	5.9 gal		0.0	108.4
Currants	22.8	22.8	22.8	4.0	9.9	624.5	2.6	1.1	156.1 gal		0.7	57.8
Huckleberry	7.9	6.9	6.9	3.0	4.0	138.4	0.6	0.2	34.6 gal		0.1	72.3
Nagoonberry	32.7	31.7	30.7	6.9	9.9	507.3	2.1	0.9	126.8 gal		0.5	86.2
Raspberry	9.9	9.9	9.9	0.0	5.0	79.6	0.3	0.1	19.9 gal		0.1	58.2
Salmonberry	71.3	68.3	68.3	19.8	34.7	2,788.8	11.6	4.7	697.2 gal		2.9	20.3
Soapberry	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Strawberry	68.3	65.3	65.3	19.8	30.7	1,676.4	7.0	2.8	419.1 gal		1.7	24.9
Dogwood berry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Twisted stalk berry (watermelon berry)	1.0	1.0	1.0	0.0	0.0	19.0	0.1	0.0	4.8 gal		0.0	151.0
Other wild berry	2.0	1.0	1.0	2.0	1.0	19.0	0.1	0.0	4.8 gal		0.0	151.0
Beach asparagus	2.0	1.0	1.0	1.0	1.0	2.4	0.0	0.0	2.4 gal		0.0	0.0
Goose tongue	3.0	2.0	2.0	1.0	0.0	2.4	0.0	0.0	2.4 gal		0.0	149.5
Wild rhubarb	4.0	2.0	2.0	2.0	0.0	28.8	0.1	0.0	7.2 gal		0.0	149.5
Devil's club	14.9	12.9	12.9	4.0	5.0	22.2	0.1	0.0	22.2 gal		0.1	46.5
Fiddlehead ferns	15.8	14.9	14.9	1.0	1.0	21.2	0.1	0.0	21.2 gal		0.1	58.3

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Table 2-11.—Page 5 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount <sup>a</sup>			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Vegetation, continued												
Nettle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Hudson's Bay (Labrador) tea	5.0	5.0	5.0	0.0	4.0	6.8	0.0	0.0	6.8	gal	0.0	107.1
Indian rice	3.0	3.0	3.0	0.0	1.0	16.8	0.1	0.0	13.2	gal	0.1	114.7
Mint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Salmonberry shoots	2.0	2.0	2.0	0.0	1.0	12.5	0.1	0.0	12.5	gal	0.1	143.9
Skunk cabbage	1.0	1.0	1.0	0.0	0.0	2.4	0.0	0.0	2.4	gal	0.0	151.0
Sourdock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Spruce tips	5.9	5.9	5.9	0.0	1.0	8.5	0.0	0.0	20.3	gal	0.1	91.6
Wild celery	14.9	14.9	14.9	0.0	3.0	41.5	0.2	0.1	48.6	gal	0.2	63.5
Yarrow	1.0	1.0	1.0	0.0	1.0	2.4	0.0	0.0	2.4	gal	0.0	151.0
Other wild greens	1.0	1.0	1.0	0.0	1.0	10.1	0.0	0.0	10.1	gal	0.0	151.0
Unknown mushrooms	39.6	36.6	36.6	14.9	18.8	220.9	0.9	0.4	220.9	gal	0.9	41.7
Fireweed	5.9	5.9	5.9	0.0	1.0	18.0	0.1	0.0	18.0	gal	0.1	86.6
Chaga	1.0	1.0	1.0	0.0	1.0	85.5	0.4	0.1	85.5	gal	0.4	151.0
Wild chives	1.0	1.0	1.0	0.0	0.0	11.9	0.0	0.0	11.9	gal	0.0	151.0
Black seaweed	44.6	28.7	26.7	21.8	20.8	3,113.5	13.0	5.3	778.4	gal	3.2	59.5
Bull kelp	3.0	4.0	3.0	0.0	2.0	159.2	0.7	0.3	39.8	gal	0.2	135.7
Red seaweed	19.8	11.9	11.9	6.9	10.9	1,539.8	6.4	2.6	385.0	gal	1.6	60.2
Sea ribbons	27.7	12.9	11.9	18.8	8.9	689.1	2.9	1.2	172.3	gal	0.7	67.3
Giant kelp	2.0	2.0	2.0	0.0	1.0	114.1	0.5	0.2	28.5	gal	0.1	128.1
Alaria	1.0	1.0	1.0	0.0	0.0	1.2	0.0	0.0	0.3	gal	0.0	151.0
Bladder wrack	2.0	2.0	2.0	0.0	0.0	2.4	0.0	0.0	0.6	gal	0.0	106.2
Seaweed/kelp used for fertilizer	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Unknown seaweed	2.0	2.0	2.0	1.0	0.0	38.0	0.2	0.1	9.5	gal	0.0	119.0
Wood	52.5	46.5	41.6	28.7	28.7							0.0
Cottonwood	2.0	0.0	0.0	2.0	0.0							

Source ADF&G Division of Subsistence household surveys, 2016.

Note Resources where the percentage using is greater than the combined received and harvest indicate use from resources obtained during a previous year.

Note For small land mammals and marine mammals, species that are not typically eaten show a non-zero harvest amount with a zero harvest weight. Harvest weight is not calculated for species harvested but not eaten.

Note Blank cells in the harvest weight and harvest amount columns indicate a resource was used but a harvest amount was not asked or was undefined.

a. The harvest amount for summary rows is converted to the unit "pounds" to avoid tally conflicts if there are incompatible units of measure among resources in the category.

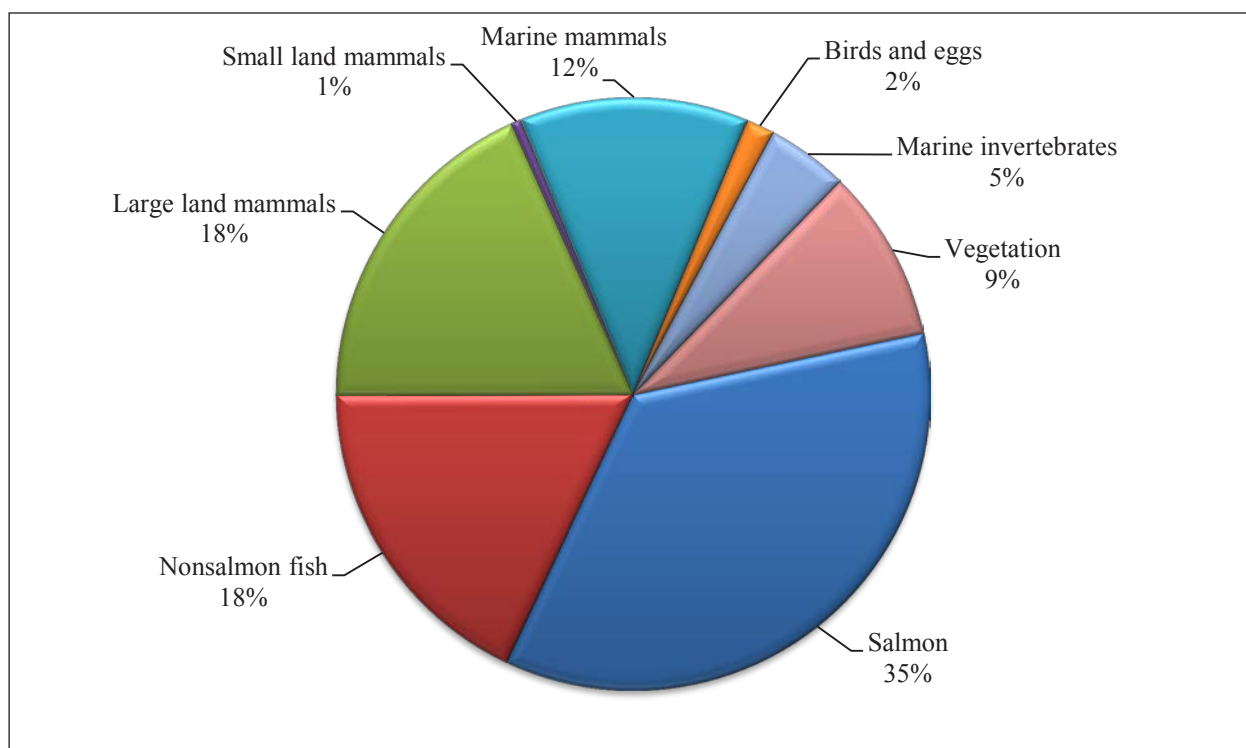


Figure 2-14.—Composition of harvest in pounds usable weight, by resource category, Yakutat, 2015.

Pacific herring return a little after the eulachon and residents can set out hemlock branches around the islands to harvest the Pacific herring spawn (eggs). By May and June, salmonberries are starting to ripen as fiddlehead ferns and spruce tips become prime for picking throughout the area. Berries and plants continue blooming and ripening and residents engage in picking throughout the summer and into the fall for foods like mushrooms or highbush cranberries. Seaweeds are harvested toward the end of spring or beginning of summer. Harbor seals and sea otters are harvested throughout the year, but springtime and fall are popular hunting seasons. Chinook salmon fishing begins in earnest in the spring and will last through the summer. Chinook salmon are caught in nets in Yakutat Bay during the summer, but also on rod and reel throughout the year. Coho salmon are one of the latest salmon runs available for harvest and residents will fish for them through October and November. Nets are put out in the Situk River area to harvest sockeye salmon in June and July. With the better summer weather, people head out in boats to harvest Dungeness crab, shrimp, and halibut. Snowshoe hares are taken during summertime as well as fall. As fishing and berry picking begin to slow down with the transition to fall, residents turn their attention to hunting. Deer season opens for the month of November, while moose hunting occurs from September through December. The areas close to Yakutat where a lot of people hunt moose are open in October and the beginning of November. Ducks and geese migrate through the Yakutat area in the fall and hunters search out many different types of waterfowl. Ptarmigan hunting increases through the fall into the winter months when most of the harvest takes place. Fall and winter months are popular times to dig clams on the beaches. Winter is also the time when furbearers are at their peak quality and most trapping occurs during these months.

### USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

Wild resources are widely used and shared in Yakutat. Nearly every household (99%) in Yakutat used at least 1 wild resource during 2015 (Table 2-11). More than 87% of households gave away 1 or more resources during this time period, while resources were received by 97% of households. Vegetation was the resource category given by the greatest percentage of households, with 66% giving the resource and 67% receiving it. Nonsalmon fish was received by the most households (84%), but was given by fewer households (57%) than

Table 2-12.—Top ranked resources used by households, Yakutat, 2015.

Rank <sup>a</sup>	Resource	Percentage of households using
1.	Pacific halibut	90.1%
2.	Sockeye salmon	83.2%
3.	Chinook salmon	79.2%
4.	Moose	75.2%
5.	Salmonberry	71.3%
6.	Strawberry	68.3%
7.	Coho salmon	64.4%
8.	Blueberry	59.4%
9.	Dungeness crab	52.5%
10.	Pacific herring roe on hemlock branches	45.5%

Source ADF&G Division of Subsistence household surveys, 2016.

a. Resources used by the same percentage of households share the highest rank value instead of having sequential rank values.

gave vegetation. Salmon was given by 61% of households and received by 73%. Large land mammals were also received by a lot of households (72%) but were given by only 36%. Similarly, marine invertebrates was also a highly shared resource category, with 35% of households giving and 60% of households receiving. The least shared resources were marine mammals (19% giving and 42% receiving), birds and eggs (14% giving and 26% receiving), and small land mammals (6% giving and 2% receiving). With the exception of small land mammals, even the least shared resource categories were still received by more than 25% of households in Yakutat, indicating just how fundamental the sharing networks in Yakutat are.

Table 2-12 lists the top ranked resources used by households and Figure 2-15 shows the species with the highest harvests during the 2015 study year. Of the top 10 used resources, 6 come from the marine environment and of the 4 terrestrial species, 3 are varieties of berry. The dominance of marine resources reflects the historical use of these resources. Berries, as seen above, are some of the most shared of the resources in Yakutat. Interestingly, the resources most used are not necessarily the most harvested. While sockeye, coho, and Chinook salmon, as well as moose and salmonberry are represented in Figure 2-15, herring eggs, crabs, and other berries widely used are not. Species like harbor seal and eulachon show up as one of the top harvested resources, but are not among the top used resources.

## Salmon

Yakutat households harvested all 5 species of salmon found in Alaska. In 2015, nearly one-half (49%) of the harvest by weight was of sockeye salmon, totaling 27,078 lb, or 46 lb per person (Figure 2-16; Table 2-11).



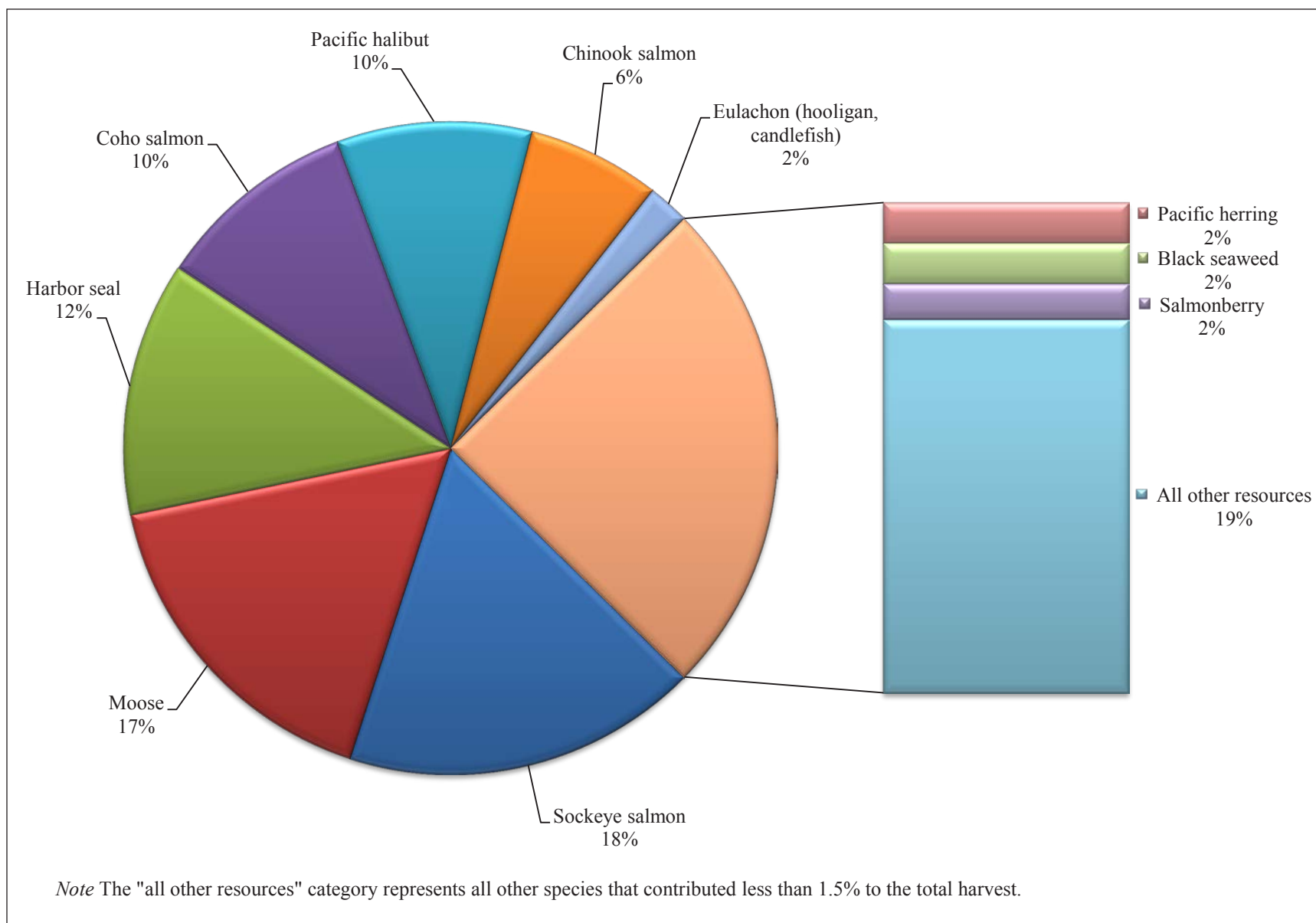


Figure 2-15.—Top resources harvested by percentage of total harvest in pounds usable weight, Yakutat, 2015.

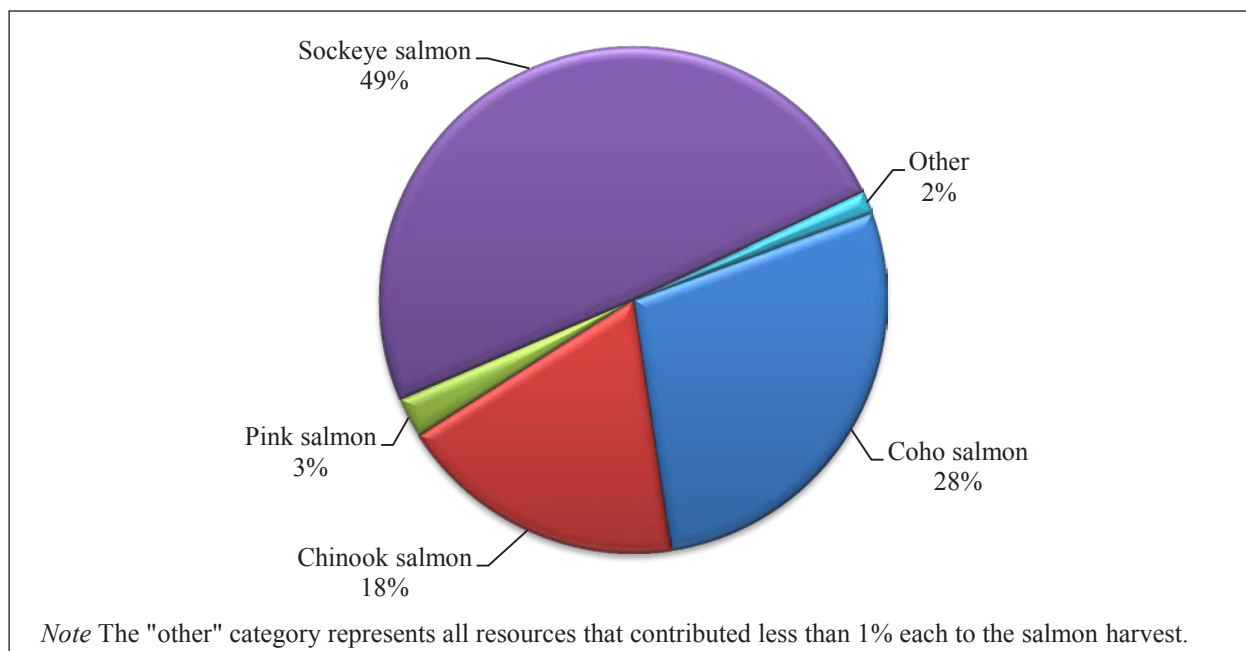


Figure 2-16.—Composition of salmon harvest in pounds usable weight, Yakutat, 2015.

Coho salmon followed with 28% of the harvest, or 15,438 lb (26 lb per capita). The next most harvested species was Chinook salmon: 10,086 lb (17 lb per capita) were harvested for a contribution to the overall harvest of 18%. Pink and chum salmon harvests combined composed less than 5% of the overall salmon harvest and were unsurprisingly used, harvested, or shared by the least number of households. Although pink salmon harvests account for a small percentage of the harvest in 2015, in the past, pink salmon played an important role as was explained by a key respondent:

One thing the old people always used to say, tell their boys or husbands, if you catch the first humpy [pink salmon] I want it. I told my kids I want the first humpy you guys catch. It wasn't until my son-in-law came up from Spokane, he got me a humpy. The first part of the season, you get that first humpy and all you do is boil it. Boil it and eat it with raw onion. I learned that from the old people. And they say when you boil it, if it turns out milky, that's the old fashioned way. And I don't know why.

Overall, 94% of households used salmon in 2015; the largest percentage of households used sockeye salmon (83%), followed by Chinook (79%) and coho (64%) salmon. Sockeye salmon was also given by the most households (48%), but Chinook salmon was received by the most (56%). The larger size of a Chinook salmon allows for 1 fish to be shared more easily with multiple households. Coho salmon was given by slightly more households than Chinook salmon, but received by only 24%. Most households that attempted to catch salmon of any species were successful.

There were 68 Yakutat households surveyed that reported they obtained a subsistence salmon permit in 2015 (Table 2-13). Subsistence fishing gear was used for the majority of the salmon harvest: 11,040 salmon (41,120 lb) were harvested using subsistence gear (mainly set gillnets), and 1,183 salmon (5,272 lb) were harvested with rod and reel gear (Table 2-14). Removal from commercial harvests for home use accounted for 1,004 salmon harvested (4,353 lb) and households caught 713 salmon (4,050 lb) by trolling. Figure 2-17 is a visual representation of the salmon harvest weight by gear type. An estimated 75% of the salmon harvest weight was caught using subsistence nets (Table 2-15). Subsistence gear types were the most commonly used harvest methods for all identified species harvested. Twenty-four percent of the Chinook salmon

*Table 2-13.—Reported subsistence salmon permit participation, Yakutat, 2015.*

Fishery participation characteristics	Number
Eligible households	240
Households surveyed	101
Households reporting a subsistence salmon permit	68
Total household members listed on permits	136
Household members listed on permits (mean)	2
Household members listed on permits (minimum)	1
Household members listed on permits (maximum)	7
Households reporting non-household members listed on permits	13
Total non-household members listed on permits	24
Non-household members listed on permits (mean)	2
Non-household members listed on permits (minimum)	1
Non-household members listed on permits (maximum)	5
Households reporting being listed on another household's permit	0

*Source* ADF&G Division of Subsistence household surveys, 2016.

harvest was done while trolling, while removal from commercial catches and rod and reel fishing each accounted for 17% of the harvest. For coho salmon, 12% of the harvest came from rod and reel harvests.

The major salmon fishing effort for all species of salmon occurred in the Situk River and Yakutat Bay. Chinook and coho salmon were harvested throughout Yakutat Bay from Ocean Cape to Knight Island (Figure 2-18). They were also harvested in the Situk River: Chinook salmon nearer the mouth and coho salmon from the mouth upriver toward Situk Lake. Coho salmon were also harvested in other water bodies such as Tawah Creek and the Italio and Akwe rivers. Additional Chinook salmon were harvested in Dry Bay. Sockeye and pink salmon were both harvested in the Situk River and close to town in Yakutat Bay (Figure 2-19). In addition sockeye salmon were harvested near the Italio River and pink salmon from the Akwe River. No harvest locations for chum salmon were recorded.

### **Nonsalmon Fish**

Yakutat households harvested many species of nonsalmon fish during 2015, but halibut was the major target. By weight, halibut accounted for 58% of the total nonsalmon fish harvest, or 16,215 lb, which is 27 lb per capita (Figure 2-20; Table 2-11). Of the remaining 32% of the harvest, harvests of eulachon, herring, and herring eggs contributed the most. With a harvest of 3,169 lb (5 lb per capita), eulachon harvests accounted for 12% of the harvest. An additional 11% came from harvests of herring (3,151 lb; 5 lb per capita) and 7% from herring eggs on branches (1,877 lb; 3 lb per capita). Overall 66% of households attempted to harvest nonsalmon fish species and 62% of households were successful. Nonsalmon fish species were widely shared, with 57% of households giving and 84% receiving them. More households attempted to harvest halibut than any other species (56%). This was followed distantly by households attempting to harvest eulachon (23%), lingcod (16%), and black rockfish (12%). Halibut, eulachon, and herring eggs on branches were the most shared with 47%, 22% and 17% of households sharing them, respectively. Approximately 66% of households received halibut, 41% received herring eggs on branches, and 32% received eulachon. Lingcod was given by 9% of households and received by 10%; no other species was given or received by more than 5% of households in 2015.

Table 2-14.—Estimated harvest of salmon by gear type and resource, Yakutat, 2015.

Resource	Subsistence methods													
	Removed from commercial catch		Subsistence gear, any method						Trolling		Rod and reel		Any method	
			Gillnet or seine		Other method									
	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	1,004.1	4,352.6	11,030.5	41,069.7	9.5	50.2	11,040.0	41,120.0	712.9	4,050.2	1,182.6	5,271.5	13,939.6	54,794.3
Chum salmon	2.4	14.9	76.0	476.0	2.4	14.9	78.4	490.9	0.0	0.0	0.0	0.0	80.8	505.8
Coho salmon	112.6	496.7	2,625.7	11,579.5	2.4	10.5	2,628.1	11,590.0	325.5	1,435.7	434.4	1,915.7	3,500.7	15,438.1
Chinook salmon	242.4	1,755.6	582.2	4,216.8	2.4	17.2	584.6	4,234.0	339.8	2,461.3	225.7	1,635.1	1,392.5	10,086.0
Pink salmon	2.4	6.7	463.4	1,298.9	0.0	0.0	463.4	1,298.9	0.0	0.0	36.0	100.9	501.7	1,406.5
Sockeye salmon	644.3	2,078.7	7,283.2	23,498.4	2.4	7.7	7,285.5	23,506.1	47.5	153.3	415.2	1,339.6	8,392.6	27,077.8
Unknown salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	71.3	280.2	71.3	280.2

Source ADF&G Division of Subsistence household surveys, 2016.  
Note The harvested number of salmon is represented as individual fish harvested.

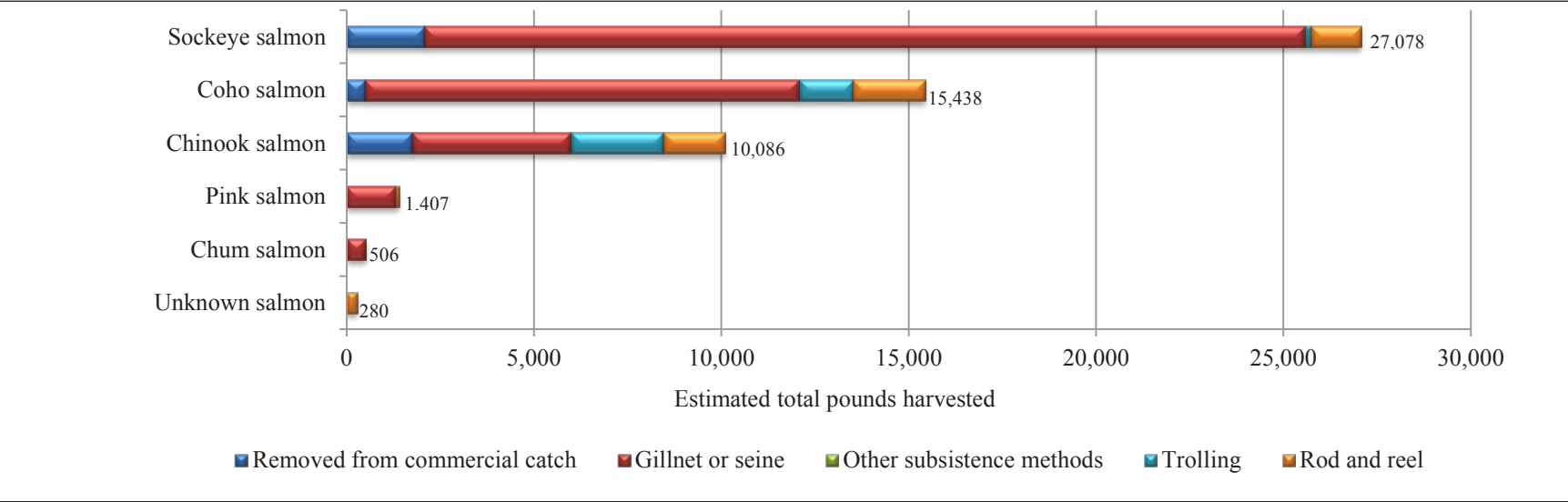


Figure 2-17.—Estimated harvest of salmon in pounds usable weight by gear type and resource, Yakutat, 2015.

Table 2-15.—Estimated percentages of salmon harvest in pounds usable weight by gear type, resource, and total salmon harvest, Yakutat, 2015.

Resource	Percentage base	Removed from commercial catch	Subsistence methods			Trolling	Rod and reel	Any method
			Gillnet or seine	Other	Subsistence gear, any			
<b>Salmon</b>	<b>Gear type</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
	<b>Resource</b>	<b>7.9%</b>	<b>75.0%</b>	<b>0.1%</b>	<b>75.0%</b>	<b>7.4%</b>	<b>9.6%</b>	<b>100.0%</b>
	<b>Total</b>	<b>7.9%</b>	<b>75.0%</b>	<b>0.1%</b>	<b>75.0%</b>	<b>7.4%</b>	<b>9.6%</b>	<b>100.0%</b>
Chum salmon	Gear type	0.3%	1.2%	29.6%	1.2%	0.0%	0.0%	0.9%
	Resource	2.9%	94.1%	2.9%	97.1%	0.0%	0.0%	100.0%
	Total	0.0%	0.9%	0.0%	0.9%	0.0%	0.0%	0.9%
Coho salmon	Gear type	11.4%	28.2%	20.9%	28.2%	35.4%	36.3%	28.2%
	Resource	3.2%	75.0%	0.1%	75.1%	9.3%	12.4%	100.0%
	Total	0.9%	21.1%	0.0%	21.2%	2.6%	3.5%	28.2%
Chinook salmon	Gear type	40.3%	10.3%	34.3%	10.3%	60.8%	31.0%	18.4%
	Resource	17.4%	41.8%	0.2%	42.0%	24.4%	16.2%	100.0%
	Total	3.2%	7.7%	0.0%	7.7%	4.5%	3.0%	18.4%
Pink salmon	Gear type	0.2%	3.2%	0.0%	3.2%	0.0%	1.9%	2.6%
	Resource	0.5%	92.4%	0.0%	92.4%	0.0%	7.2%	100.0%
	Total	0.0%	2.4%	0.0%	2.4%	0.0%	0.2%	2.6%
Sockeye salmon	Gear type	47.8%	57.2%	15.3%	57.2%	3.8%	25.4%	49.4%
	Resource	7.7%	86.8%	0.0%	86.8%	0.6%	4.9%	100.0%
	Total	3.8%	42.9%	0.0%	42.9%	0.3%	2.4%	49.4%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	5.3%	0.5%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.5%

Source ADF&G Division of Subsistence household surveys, 2016.

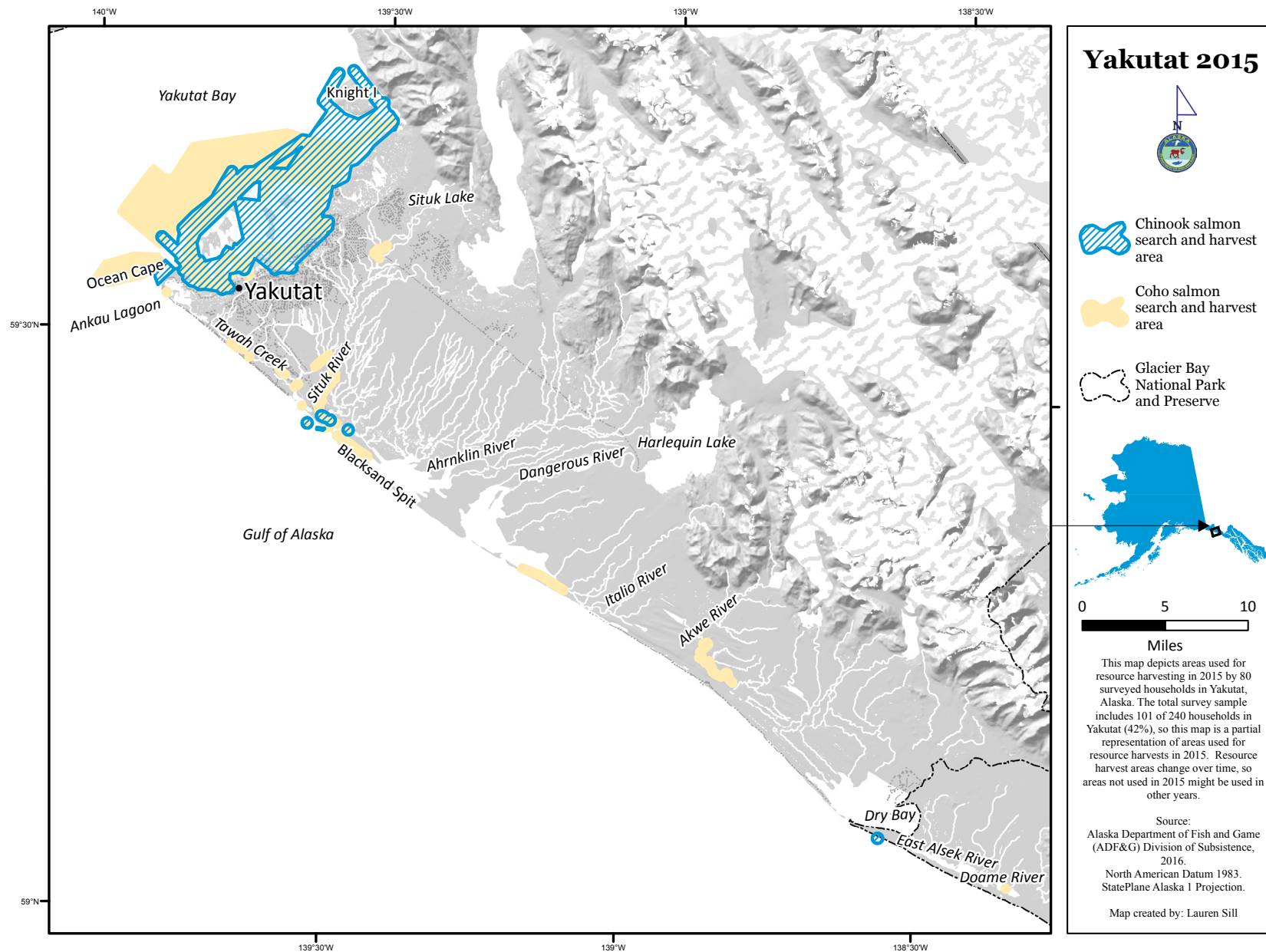


Figure 2-18.—Fishing and harvest locations of Chinook and coho salmon, Yakutat, 2015.



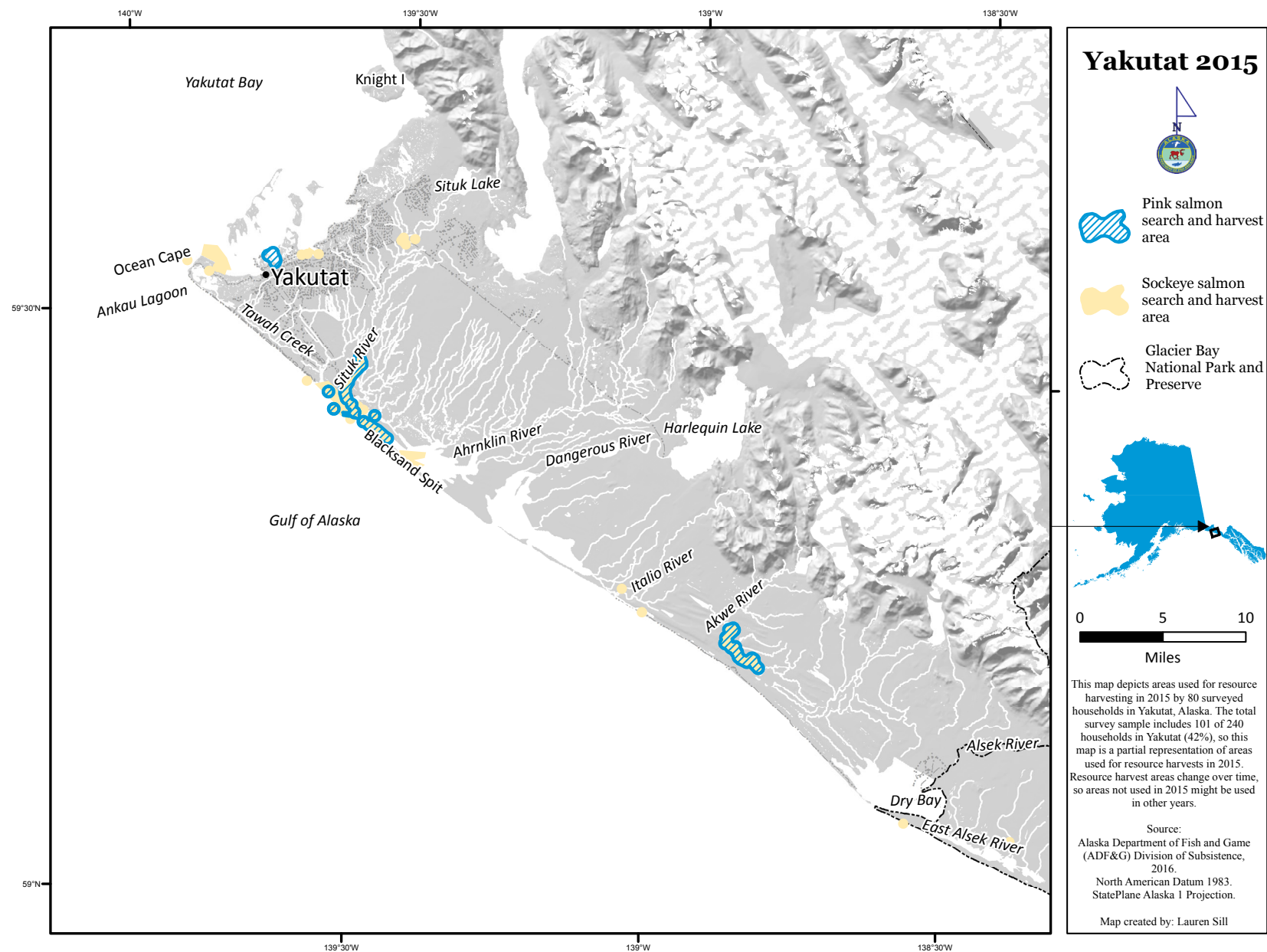


Figure 2-19.—Fishing and harvest locations of pink and sockeye salmon, Yakutat, 2015.

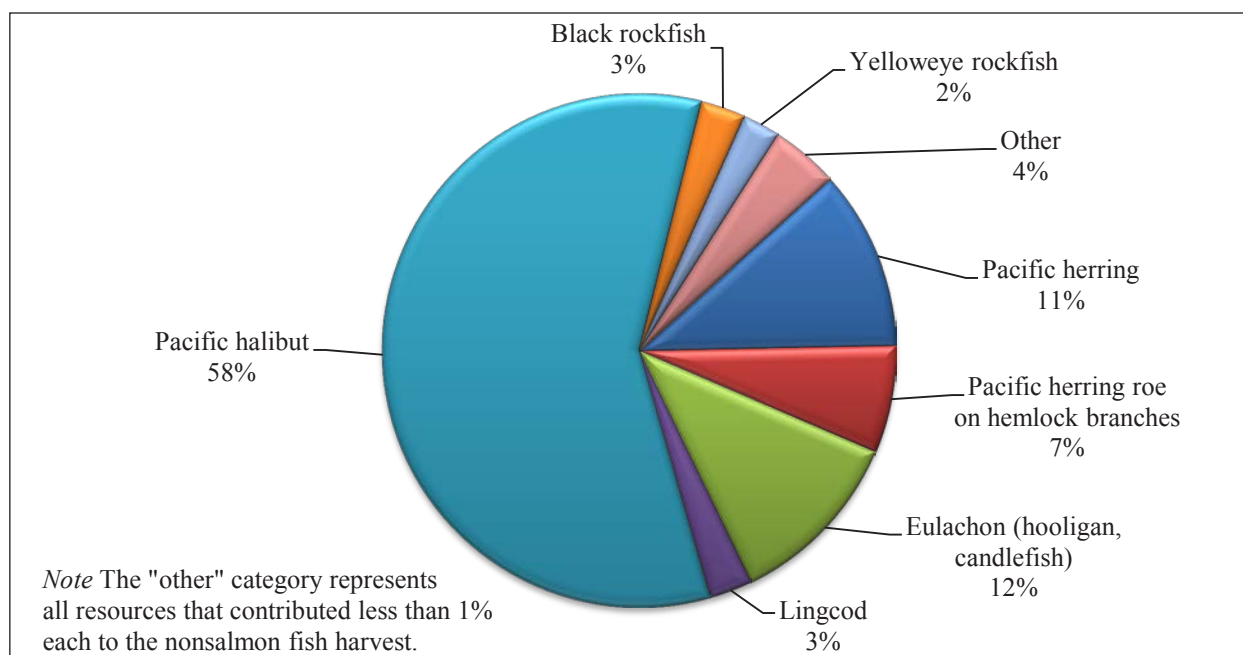


Figure 2-20.—Composition of nonsalmon fish harvest in pounds usable weight, Yakutat, 2015.

An estimated total of 14,282 lb of nonsalmon fish were harvested using subsistence methods, and 10,695 lb were harvested using rod and reel gear (Table 2-16).<sup>3</sup> Figure 2-21 is a visual representation of the nonsalmon fish harvest weight by gear type. As estimated in total pounds of fish, 51% of the nonsalmon fish harvest was caught using subsistence gear (Table 2-17). Following is a summary of the gear types used to catch the most targeted and harvested marine and freshwater species. Subsistence gear was the most commonly used gear for many species, including herring eggs on any substrate, eulachon, and herring. Halibut, lingcod, and cutthroat trout were most often harvested by rod and reel. There was substantial variety in the harvest methods used by Yakutat fishers: for instance, halibut and lingcod were caught with all gear categories. Black and yelloweye rockfish were removed from commercial catches and caught with rod and reel, and a small proportion of these harvests were caught using subsistence gear types. Also, sablefish, Dolly Varden, steelhead, and cutthroat trout were all removed from commercial catches for home use, and each species was harvested by an additional 1 or 2 methods. Flounder was the only species solely harvested through commercial catch removals.

Yakutat Bay was used for most nonsalmon fish harvests. Residents harvested halibut from throughout the bay up toward Disenchantment Bay and harvested Pacific herring and herring eggs from bay waters among the islands directly offshore from the community (Figure 2-22). Rockfishes and sculpin were similarly harvested from the bay, though from a smaller geographic region, and sablefish was harvested closer to town by the islands (Figure 2-23). Yakutat residents used Yakutat Bay for lingcod fishing, as well as waters of the Gulf of Alaska, which is also where rock greenling were harvested (Figure 2-24). Eulachon harvesting took place in the fresher waters of the Situk River mouth. Dolly Varden and trout fishing occurred in the creeks and rivers around Yakutat, namely the Situk river and mouth, the Italio River, and Tawah Creek (Figure 2-25).

3. Here, the category “subsistence methods” refers to types of gear commonly used under state subsistence regulations, such as nets, longlines, hand lines, and lines attached to a rod or pole while fishing through ice. Note that under federal regulations, qualified individuals may use rod and reel for subsistence halibut fishing.



Table 2-16.—Estimated harvest of nonsalmon fish by gear type and resource, Yakutat, 2015.

Resource	Units <sup>a</sup>	Subsistence methods													
		Removed from commercial catch		Gillnet or seine		Longline or skate		Other method		Subsistence gear, any method		Rod and reel		Any method	
		Number <sup>a</sup>	Pounds	Number <sup>a</sup>	Pounds	Number <sup>a</sup>	Pounds	Number <sup>a</sup>	Pounds	Number <sup>a</sup>	Pounds	Number <sup>a</sup>	Pounds	Number <sup>a</sup>	Pounds
<b>Nonsalmon fish</b>			<b>2,819.3</b>		<b>2,772.1</b>		<b>5,452.8</b>		<b>6,057.1</b>		<b>14,282.0</b>		<b>10,694.5</b>		<b>27,795.8</b>
Pacific herring	gal	0.0	0.0	427.7	2,566.3	0.0	0.0	2.4	14.3	430.1	2,580.6	95.0	570.3	525.1	3,150.9
Pacific herring roe/unspecified	gal	0.0	0.0	0.0	0.0	0.0	0.0	2.4	16.6	2.4	16.6	0.0	0.0	2.4	16.6
Pacific herring spawn on kelp	gal	0.0	0.0	0.0	0.0	0.0	0.0	12.2	85.5	12.2	85.5	0.0	0.0	12.2	85.5
Pacific herring roe on hair seaweed	gal	0.0	0.0	0.0	0.0	0.0	0.0	12.2	85.5	12.2	85.5	0.0	0.0	12.2	85.5
Pacific herring roe on hemlock branches	gal	0.0	0.0	0.0	0.0	0.0	0.0	476.5	1,877.3	476.5	1,877.3	0.0	0.0	476.5	1,877.3
Eulachon (hooligan, candlefish)	ind	0.0	0.0	11.9	71.3	0.0	0.0	504.4	3,026.1	516.2	3,097.4	11.9	71.3	528.1	3,168.7
Silver smelt	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific (gray) cod	ind	2.4	7.6	0.0	0.0	2.4	7.6	0.0	0.0	2.4	7.6	0.0	0.0	4.8	15.2
Pacific tomcod	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown flounder	ind	1.6	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	4.8
Lingcod	ind	23.8	95.0	21.4	85.5	16.6	66.5	14.3	57.0	52.3	209.1	114.1	456.2	190.1	760.4
Rock greenling	ind	0.0	0.0	0.0	0.0	0.0	0.0	9.5	9.5	9.5	9.5	0.0	0.0	9.5	9.5
Pacific halibut	lb	1,429.4	1,429.4	2.4	2.4	5,287.1	5,287.1	831.7	831.7	6,121.2	6,121.2	8,664.0	8,664.0	16,214.6	16,214.6
Black rockfish	ind	240.0	360.0	0.0	0.0	26.1	39.2	35.6	53.5	61.8	92.7	216.2	324.4	518.0	777.0
Yelloweye rockfish	ind	158.4	475.2	0.0	0.0	4.8	14.3	0.0	0.0	4.8	14.3	57.0	171.1	220.2	660.6
Dusky rockfish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.3	14.3	14.3	14.3
Copper rockfish	ind	0.0	0.0	0.0	0.0	9.5	38.0	0.0	0.0	9.5	38.0	0.0	0.0	9.5	38.0
China rockfish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown rockfish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sablefish (black cod)	ind	76.7	237.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.0	176.8	133.7	414.4
Red Irish lord	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown sculpin	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dogfish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Skates	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown sole	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brook trout	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dolly Varden	ind	85.5	119.8	16.6	23.3	0.0	0.0	0.0	0.0	16.6	23.3	35.6	49.9	137.8	193.0
Arctic grayling	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cutthroat trout	ind	33.3	46.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.6	146.4	137.8	193.0
Rainbow trout	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.4	29.9	21.4	29.9
Steelhead	ind	30.9	43.2	16.6	23.3	0.0	0.0	0.0	0.0	16.6	23.3	14.3	20.0	61.8	86.5

Source ADF&amp;G Division of Subsistence household surveys, 2016.

Note The summary row that includes incompatible units of measure for harvest number has been left blank.

Note Under federal regulations, qualified individuals may use rod and reel for subsistence Pacific halibut fishing.

a. The harvested number of each resource is measured by the unit in which the resource harvest information was collected; the unit of measurement is provided for each resource.

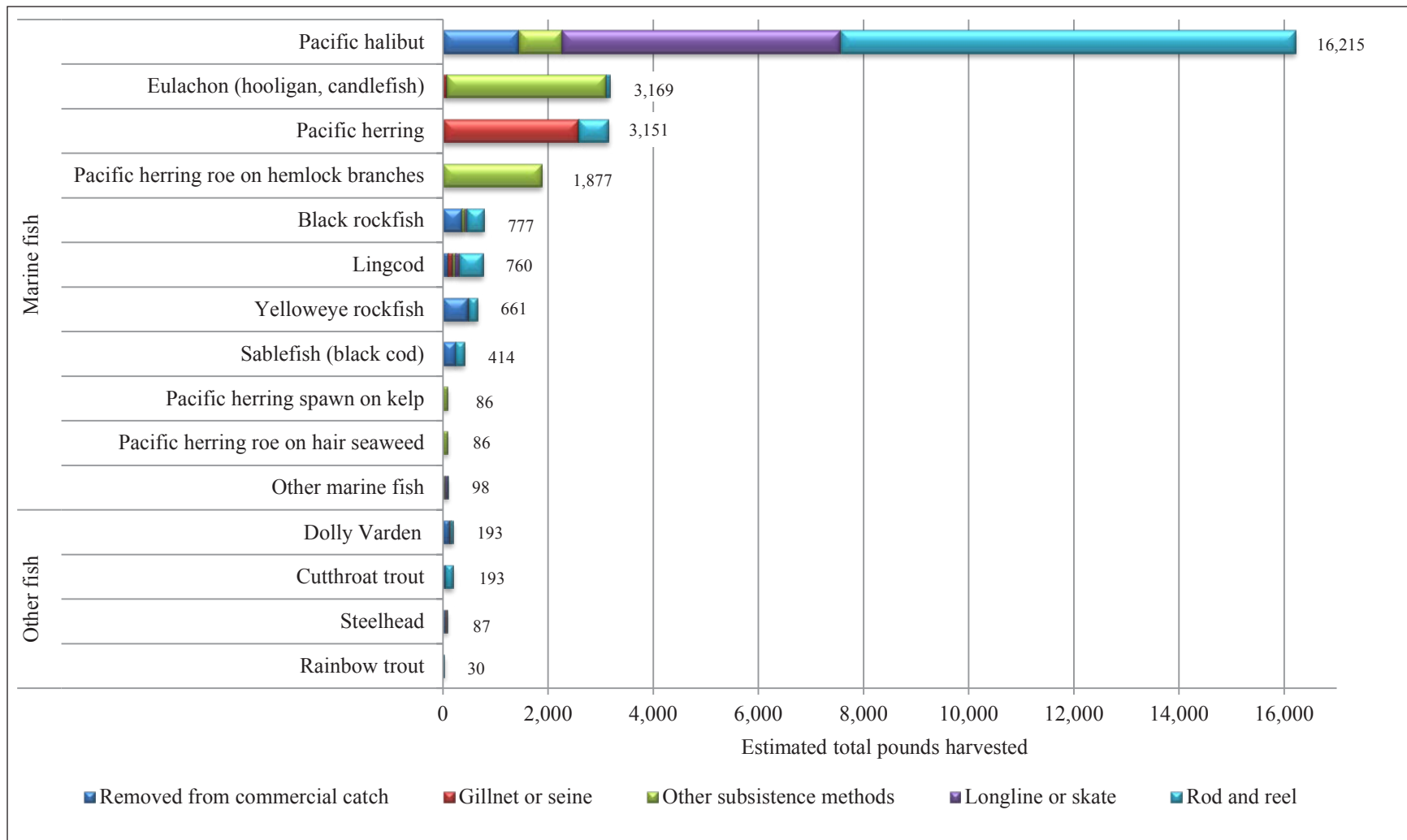


Figure 2-21.—Estimated harvest of nonsalmon fish in pounds usable weight by gear type and resource, Yakutat, 2015.

Table 2-17.—Estimated percentages of nonsalmon fish harvest in pounds usable weight by gear type, resource, and total nonsalmon fish harvest, Yakutat, 2015.

Resource	Percentage base	Removed from commercial catch	Subsistence methods				Rod and reel	Any method
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method		
<b>Nonsalmon fish</b>	<b>Gear type</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
	<b>Resource</b>	<b>10.1%</b>	<b>10.0%</b>	<b>19.6%</b>	<b>21.8%</b>	<b>51.4%</b>	<b>38.5%</b>	<b>100.0%</b>
	<b>Total</b>	<b>10.1%</b>	<b>10.0%</b>	<b>19.6%</b>	<b>21.8%</b>	<b>51.4%</b>	<b>38.5%</b>	<b>100.0%</b>
Pacific herring	Gear type	0.0%	92.6%	0.0%	0.2%	18.1%	5.3%	11.3%
	Resource	0.0%	81.4%	0.0%	0.5%	81.9%	18.1%	100.0%
	Total	0.0%	9.2%	0.0%	0.1%	9.3%	2.1%	11.3%
Pacific herring roe/unspecified	Gear type	0.0%	0.0%	0.0%	0.3%	0.1%	0.0%	0.1%
	Total	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.1%
Pacific herring spawn on kelp	Gear type	0.0%	0.0%	0.0%	1.4%	0.6%	0.0%	0.3%
	Resource	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.3%	0.3%	0.0%	0.3%
Pacific herring roe on hair seaweed	Gear type	0.0%	0.0%	0.0%	1.4%	0.6%	0.0%	0.3%
	Resource	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.3%	0.3%	0.0%	0.3%
Pacific herring roe on hemlock branches	Gear type	0.0%	0.0%	0.0%	31.0%	13.1%	0.0%	6.8%
	Resource	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	6.8%	6.8%	0.0%	6.8%
Eulachon (hooligan, candlefish)	Gear type	0.0%	2.6%	0.0%	50.0%	21.7%	0.7%	11.4%
	Resource	0.0%	2.2%	0.0%	95.5%	97.8%	2.2%	100.0%
	Total	0.0%	0.3%	0.0%	10.9%	11.1%	0.3%	11.4%
Silver smelt	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific (gray) cod	Gear type	0.3%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%
	Resource	50.0%	0.0%	50.0%	0.0%	50.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Pacific tomcod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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Table 2-17.—Page 2 of 4.

Resource	Percentage base	Removed from commercial catch	Subsistence methods				Rod and reel	Any method
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method		
Unknown flounder	Gear type	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lingcod	Gear type	3.4%	3.1%	1.2%	0.9%	1.5%	4.3%	2.7%
	Resource	12.5%	11.3%	8.8%	7.5%	27.5%	60.0%	100.0%
	Total	0.3%	0.3%	0.2%	0.2%	0.8%	1.6%	2.7%
Rock greenling	Gear type	0.0%	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific halibut	Gear type	50.7%	0.1%	97.0%	13.7%	42.9%	81.0%	58.3%
	Resource	8.8%	0.0%	32.6%	5.1%	37.8%	53.4%	100.0%
	Total	5.1%	0.0%	19.0%	3.0%	22.0%	31.2%	58.3%
Black rockfish	Gear type	12.8%	0.0%	0.7%	0.9%	0.6%	3.0%	2.8%
	Resource	46.3%	0.0%	5.0%	6.9%	11.9%	41.7%	100.0%
	Total	1.3%	0.0%	0.1%	0.2%	0.3%	1.2%	2.8%
Yelloweye rockfish	Gear type	16.9%	0.0%	0.3%	0.0%	0.1%	1.6%	2.4%
	Resource	71.9%	0.0%	2.2%	0.0%	2.2%	25.9%	100.0%
	Total	1.7%	0.0%	0.1%	0.0%	0.1%	0.6%	2.4%
Dusky rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Copper rockfish	Gear type	0.0%	0.0%	0.7%	0.0%	0.3%	0.0%	0.1%
	Resource	0.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%
China rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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Table 2-17.—Page 3 of 4.

Resource	Percentage base	Removed from commercial catch	Subsistence methods				Rod and reel	Any method
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method		
Sablefish (black cod)	Gear type	8.4%	0.0%	0.0%	0.0%	0.0%	1.7%	1.5%
	Resource	57.3%	0.0%	0.0%	0.0%	0.0%	42.7%	100.0%
	Total	0.9%	0.0%	0.0%	0.0%	0.0%	0.6%	1.5%
Red Irish lord	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown sculpin	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Dogfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Skates	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown sole	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Brook trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Dolly Varden	Gear type	4.2%	0.8%	0.0%	0.0%	0.2%	0.5%	0.7%
	Resource	62.1%	12.1%	0.0%	0.0%	12.1%	25.9%	100.0%
	Total	0.4%	0.1%	0.0%	0.0%	0.1%	0.2%	0.7%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cutthroat trout	Gear type	1.7%	0.0%	0.0%	0.0%	0.0%	1.4%	0.7%
	Resource	24.1%	0.0%	0.0%	0.0%	0.0%	75.9%	100.0%
	Total	0.2%	0.0%	0.0%	0.0%	0.0%	0.5%	0.7%

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Table 2-17.—Page 4 of 4.

Resource	Percentage base	Removed from commercial catch	Subsistence methods				Rod and reel	Any method
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method		
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Steelhead	Gear type	1.5%	0.8%	0.0%	0.0%	0.2%	0.2%	0.3%
	Resource	50.0%	26.9%	0.0%	0.0%	26.9%	23.1%	100.0%
	Total	0.2%	0.1%	0.0%	0.0%	0.1%	0.1%	0.3%

*Source* ADF&G Division of Subsistence household surveys, 2016.

*Note* Under federal regulations, qualified individuals may use rod and reel for subsistence Pacific halibut fishing.

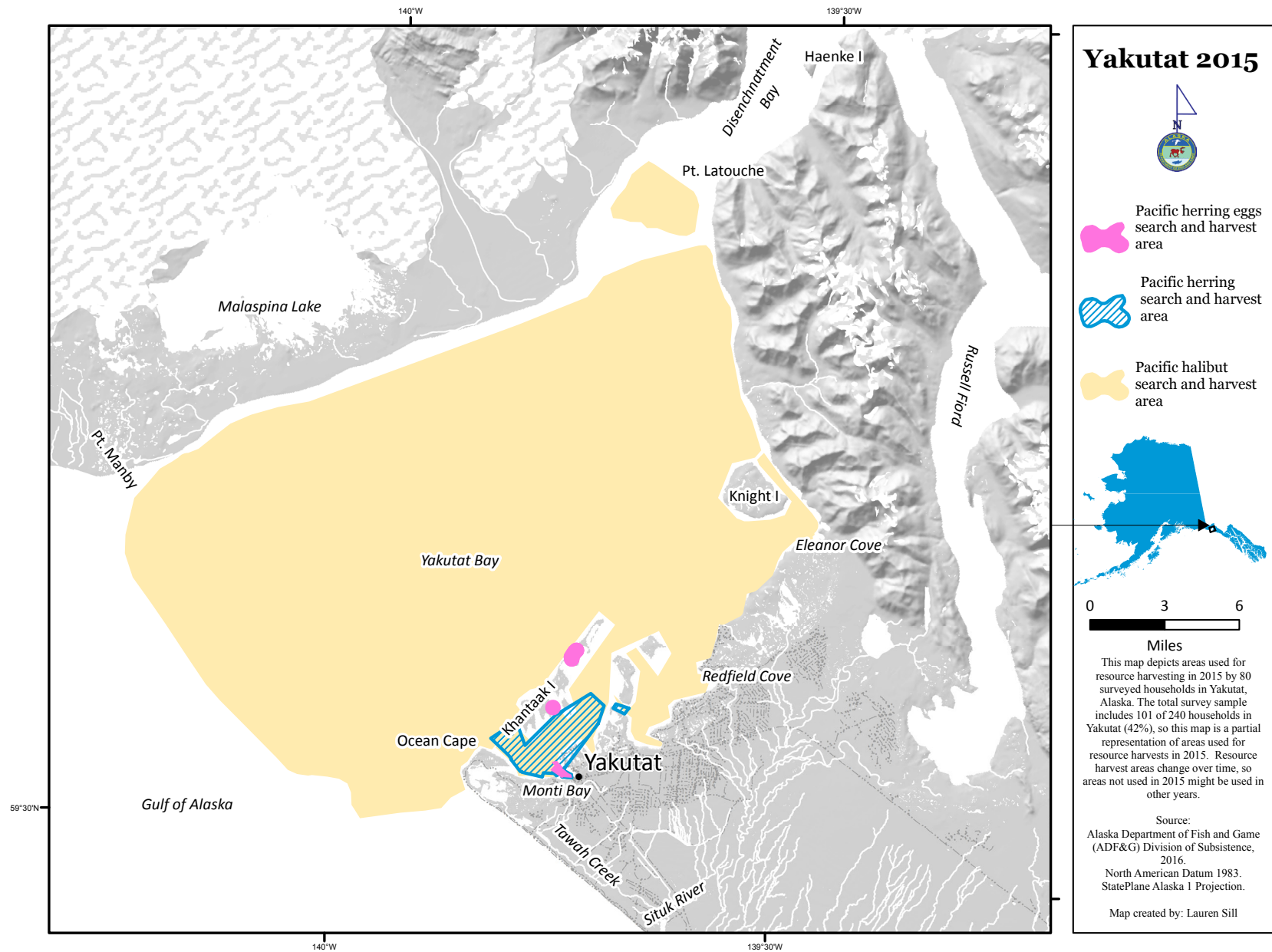


Figure 2-22.—Fishing and harvest locations of Pacific herring, herring eggs, and halibut, Yakutat, 2015.

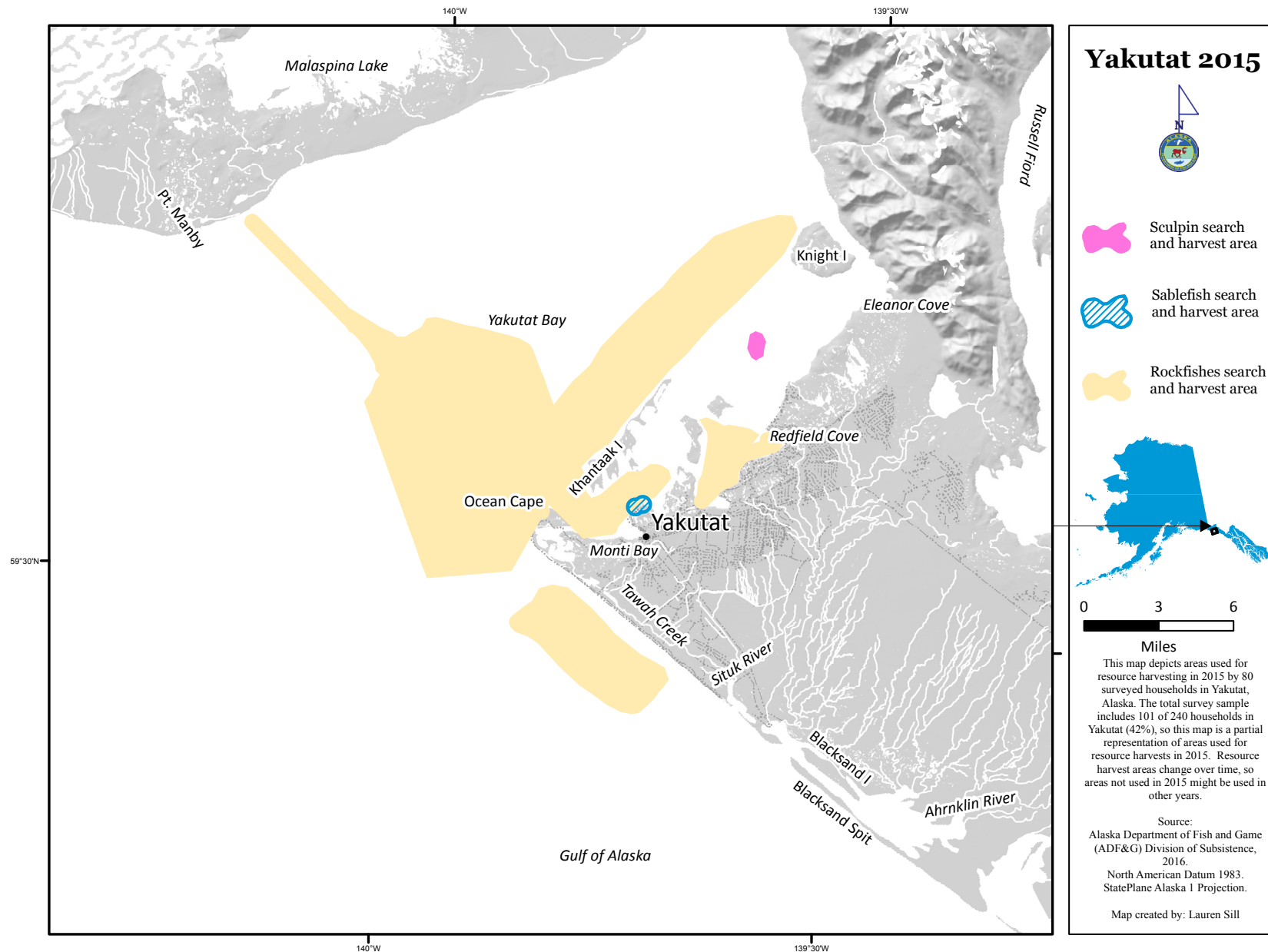


Figure 2-23.—Fishing and harvest locations of sculpin, sablefish, and rockfishes, Yakutat, 2015.



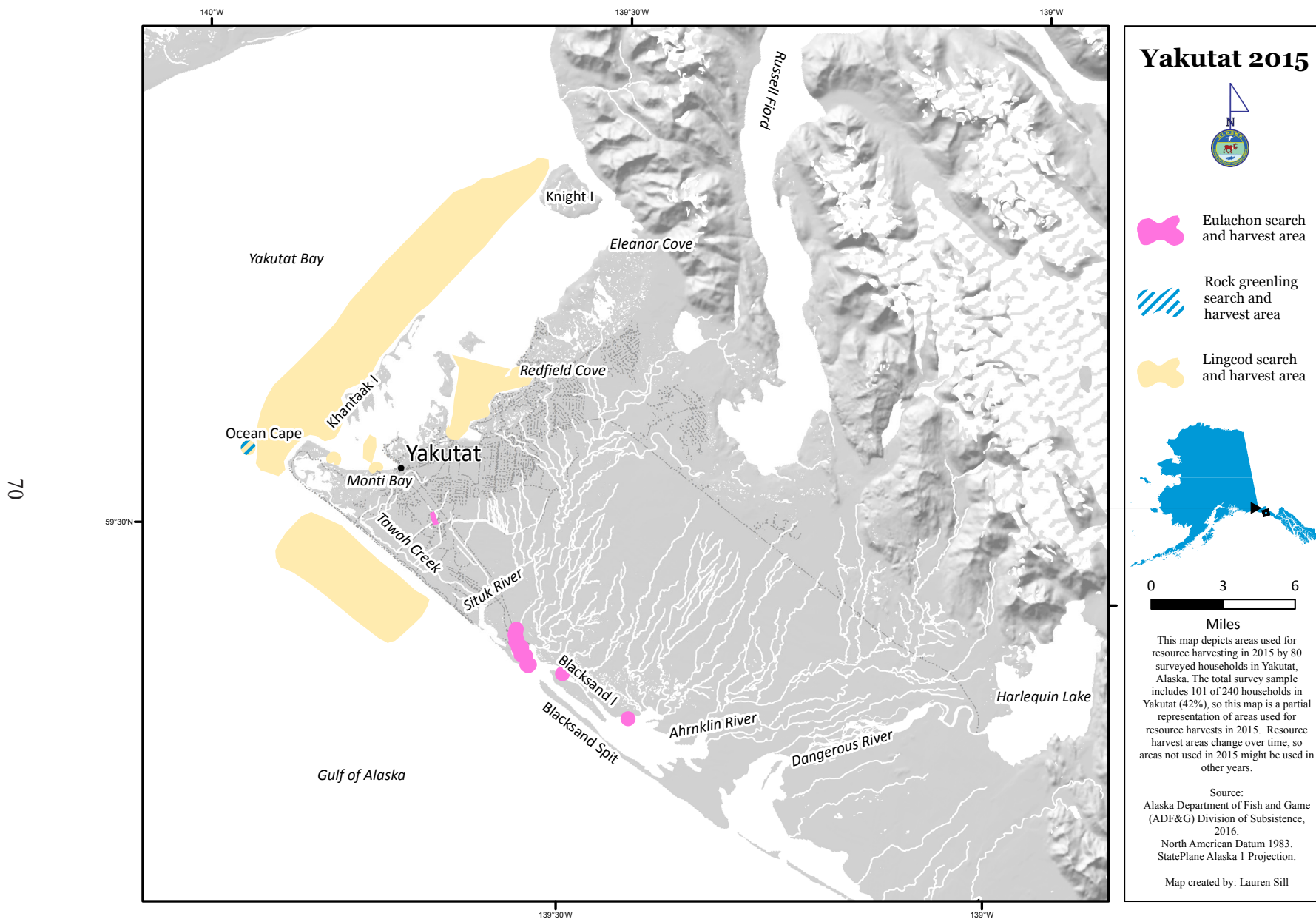


Figure 2-24.—Fishing and harvest locations of eulachon, rock greenling, and lingcod, Yakutat, 2015.

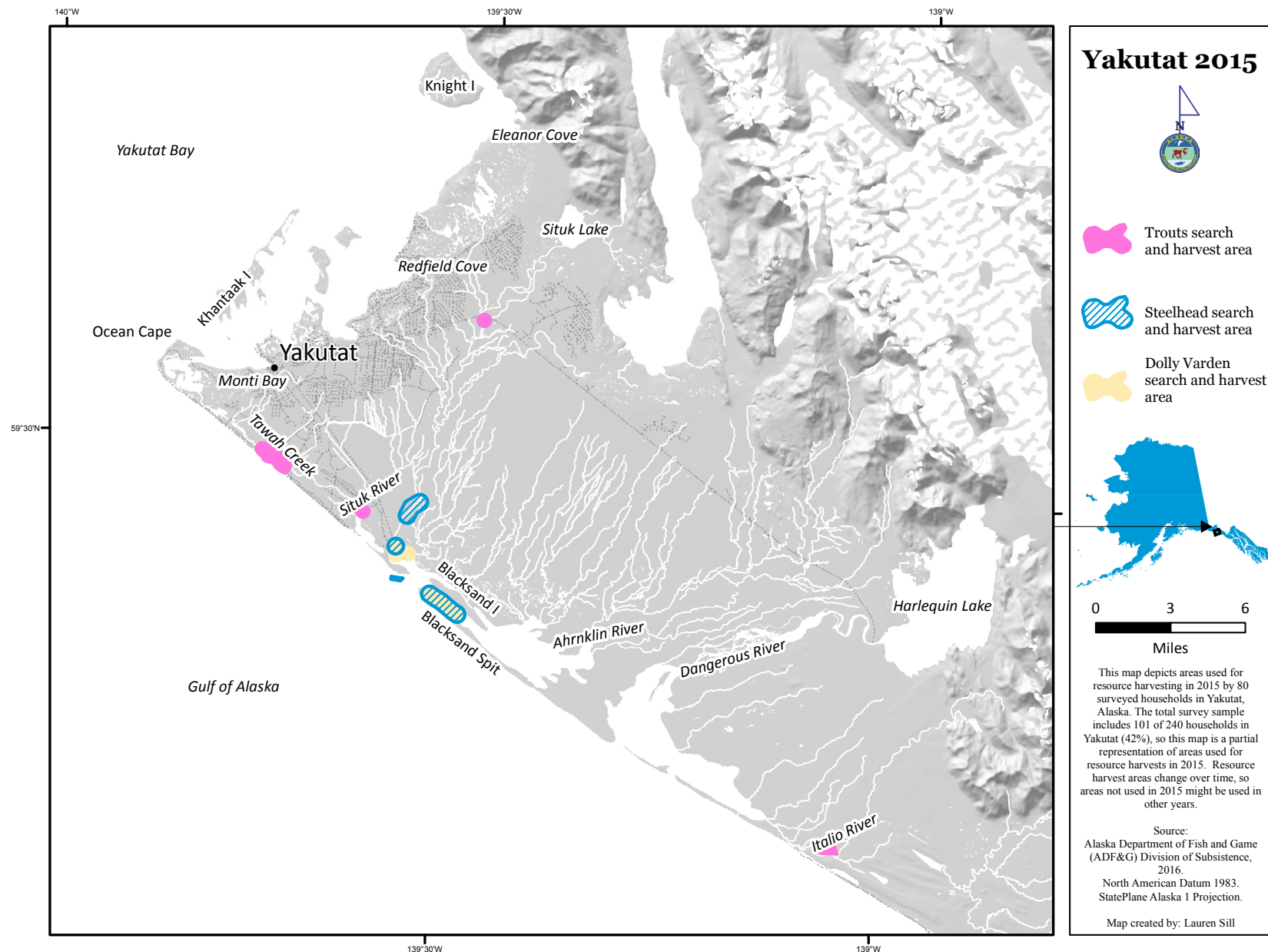


Figure 2-25.—Fishing and harvest locations of trouts, steelhead, and Dolly Varden, Yakutat, 2015.

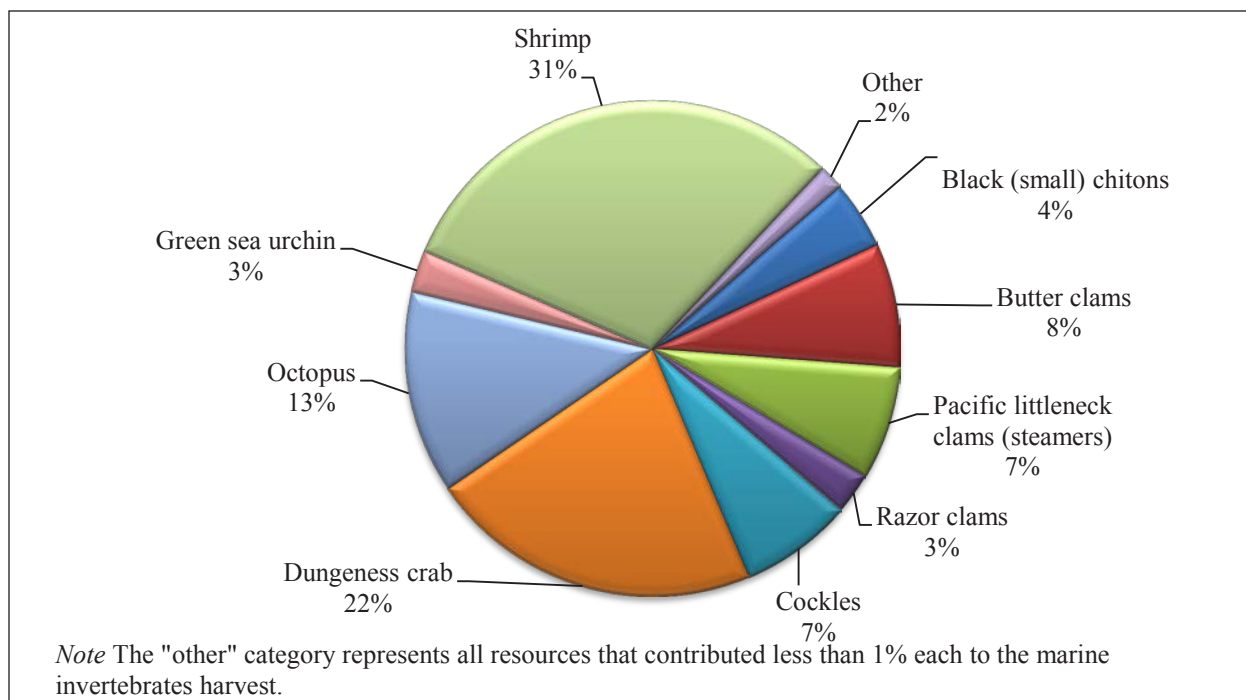


Figure 2-26.—Composition of marine invertebrate harvest in pounds usable weight, Yakutat, 2015.

## Marine Invertebrates

Yakutat residents harvested many types of marine invertebrates in 2015. A total of 6,926 lb of marine invertebrates were harvested, or nearly 12 lb per capita (Table 2-11). Shrimp made up the largest percentage of the marine invertebrate harvest with 31% (2,117 lb; 4 lb per capita), followed by Dungeness crab at 22% (1,512 lb; 3 lb per capita), and octopus with 13% (917 lb; 2 lb per capita) (Figure 2-26). Butter clams, cockles, and Pacific littleneck clams made up 8%, 7%, and 7% of the harvest, respectively. Black chitons, green sea urchins, and razor clams rounded out the harvest; all other species combined composed just 2% of the marine invertebrate harvest. Nearly three-quarters of Yakutat households used marine invertebrates in 2015, but only 45% of households harvested them (Table 2-11). Nearly all households that attempted to harvest marine invertebrates were successful; only a few households attempting to harvest clams, cockles, or Dungeness crab failed to do so. Overall, marine invertebrates were highly shared in the community with 35% of households sharing them and 60% receiving them. Dungeness crab and shrimp were used and received by the largest number of households.

In 2015, marine invertebrates were harvested throughout Yakutat Bay, especially around the islands just offshore from the community, in the Ocean Cape area, and in the myriad coves along the coastline near Yakutat (Figure 2-27).

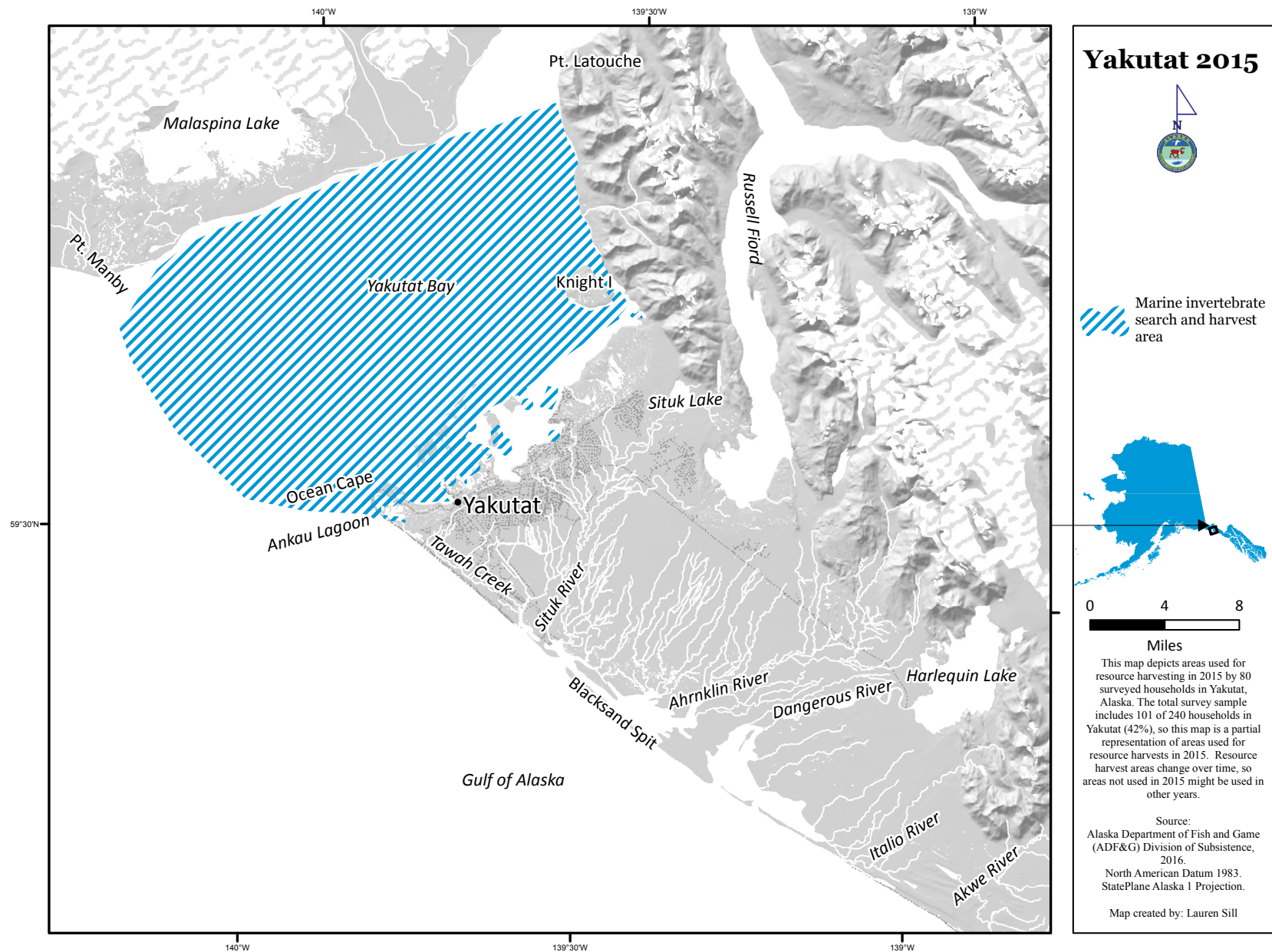
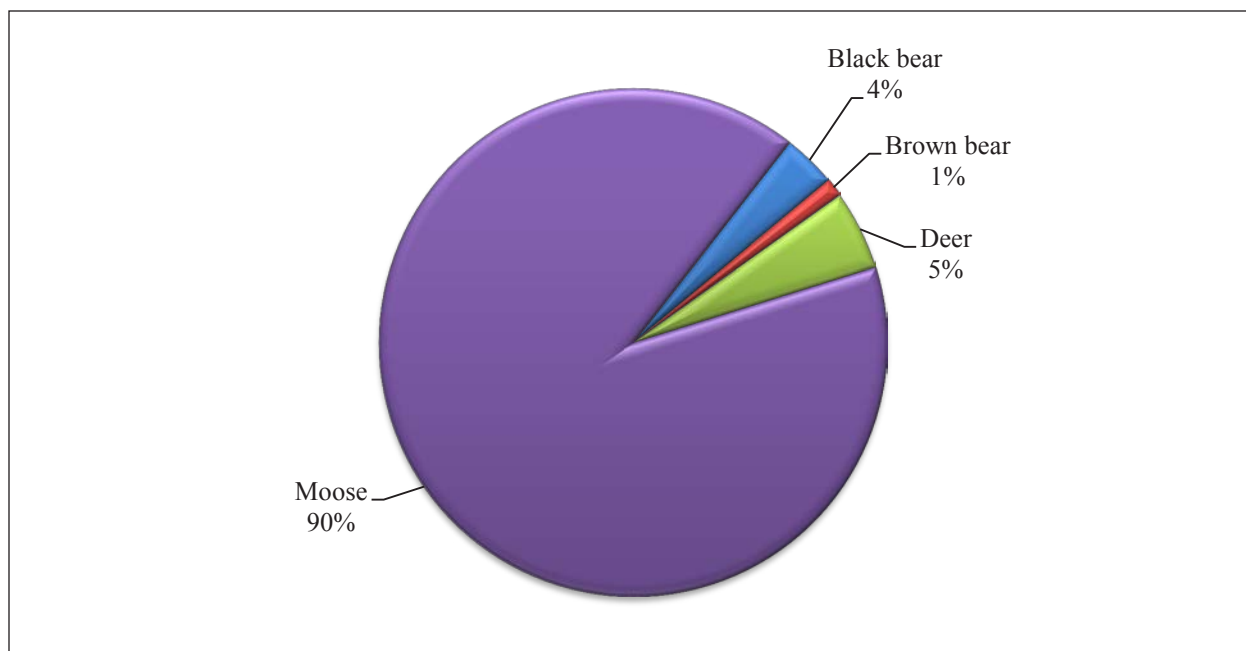


Figure 2-27.—Search and harvest locations of marine invertebrates, Yakutat, 2015.





*Figure 2-28.—Composition of large land mammal harvest in pounds usable weight, Yakutat, 2015.*

### Large Land Mammals

Moose is the main land mammal harvested in Yakutat, accounting for more than 90% of the harvest with 25,663 lb harvested (Figure 2-28; Table 2-11). Moose are relative newcomers to the Yakutat area; prior to their establishment, goat, bear, and seal were all more important sources of meat for Yakutat residents. One resident recalled his memories of the arrival of the first moose in Dry Bay:

They migrated in from Canada I think along the Alsek River. I think the first one they saw was in 1947. I was about 10 years old then. From that point on they began to multiply real fast because the environment and the food and everything was just perfect for them. In the '60s and '70s we had such a large moose population here that it was unbelievable. Then the hunting started and they didn't have any control over it. The hunting caused a lot of decline and today they are struggling to keep a healthy population in this area even as we speak.

The moose harvest in Yakutat equates to 43 lb of moose meat per person and 48 animals total. Deer, black bear, and brown bear composed the remaining 10% of the harvest. Bison, caribou, and mountain goat were all used by a small percentage of households in Yakutat, but no harvest was documented. The majority of moose were harvested in October, followed by November and September (Table 2-18). All deer were harvested in November, and all brown bears in October. Most black bears (10 animals) were taken in May, followed by 5 in June and 2 in October.

The majority (81%) of households used large land mammals, but only 27% of households harvested them (Table 2-11). An estimated 55% of households attempted to harvest large land mammals; moose and deer showed the largest disparity between attempted and successful harvest. While 35% of households attempted to harvest deer, only 9% of households were successful. For moose, 49% of households hunted and 20% were successful. Deer are still relatively scarce in Yakutat and competition for moose in the lands near Yakutat is high. Still, deer and moose were the most shared species of large land mammals, with 32% and 14% of households sharing moose and deer, respectively, and 64% and 37% of households receiving those species.

Table 2-18.—Estimated large land mammal harvests by month and sex, Yakutat, 2015.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
<b>All large land mammals</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>9.5</b>	<b>4.8</b>	<b>0.0</b>	<b>0.0</b>	<b>4.8</b>	<b>38.0</b>	<b>42.8</b>	<b>0.0</b>	<b>0.0</b>	<b>99.8</b>
Bison	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Black bear	0.0	0.0	0.0	0.0	9.5	4.8	0.0	0.0	0.0	2.4	0.0	0.0	0.0	16.6
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	2.4
Caribou	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deer	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	33.3
Deer, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	33.3
Deer, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deer, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mountain goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Moose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	33.3	9.5	0.0	0.0	47.5
Moose, bull	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	30.9	7.1	0.0	0.0	42.8
Moose, cow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	2.4
Moose, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	2.4
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2016.

Figure 2-29 presents the documented search areas for moose and deer by Yakutat residents during 2015. The road system around Yakutat was used for hunting both species. Deer hunting was concentrated on the islands and the near-coast areas, reflecting the location of the deer population. Some deer hunting also occurred on Prince of Wales Island near the communities of Thorne Bay and Coffman Cove. Moose hunting occurred more throughout the Yakutat Forelands systems from the Situk to the Italio rivers. Some residents also hunted the far side of Yakutat Bay. Bears were hunted along the road system as well as the coastlines up into Russell Fiord (Figure 2-30). Some black bear hunting occurred around the Situk River and some brown bear hunting around the Italio River.

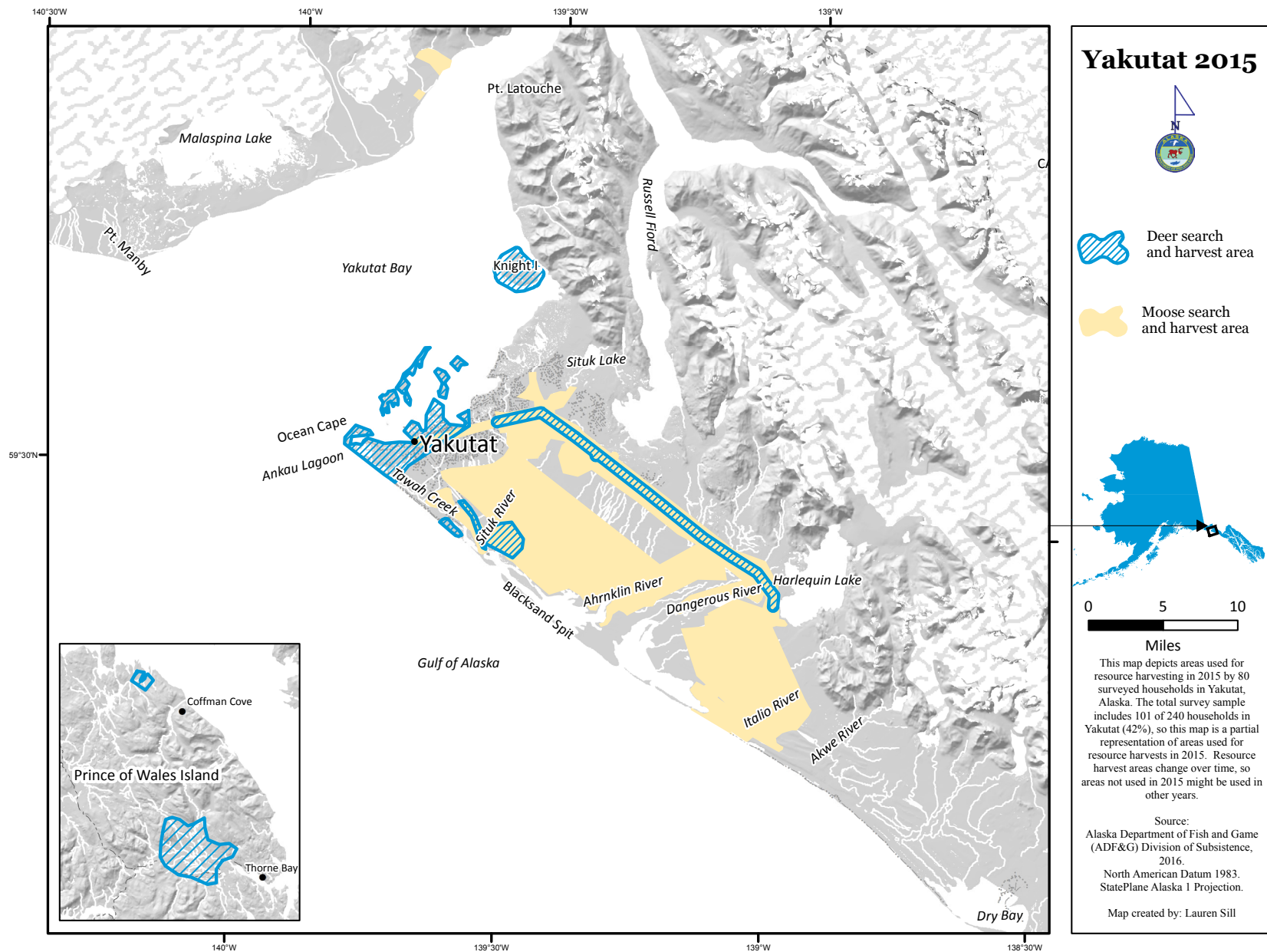


Figure 2-29.—Hunting locations of deer and moose, Yakutat, 2015.

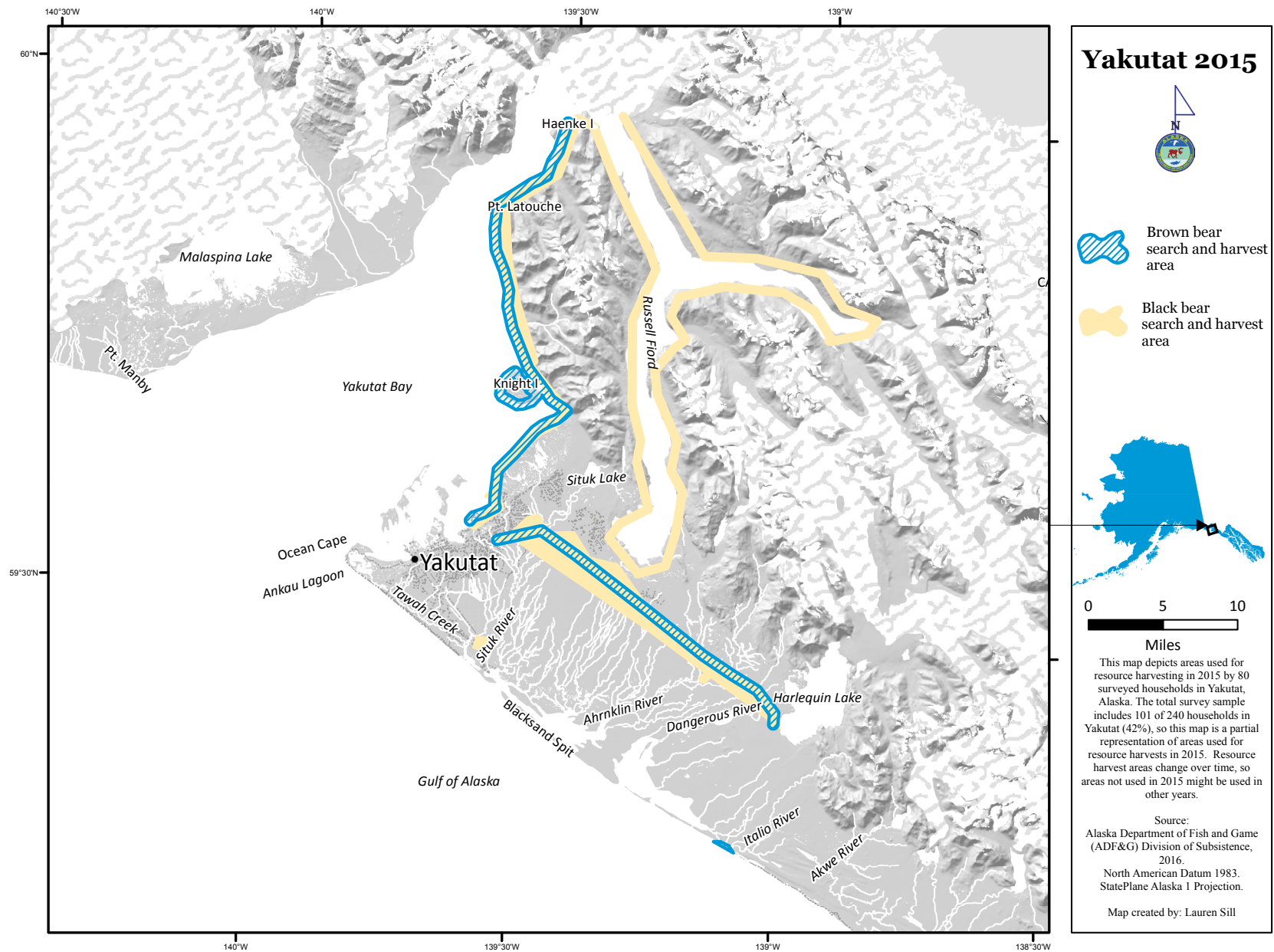
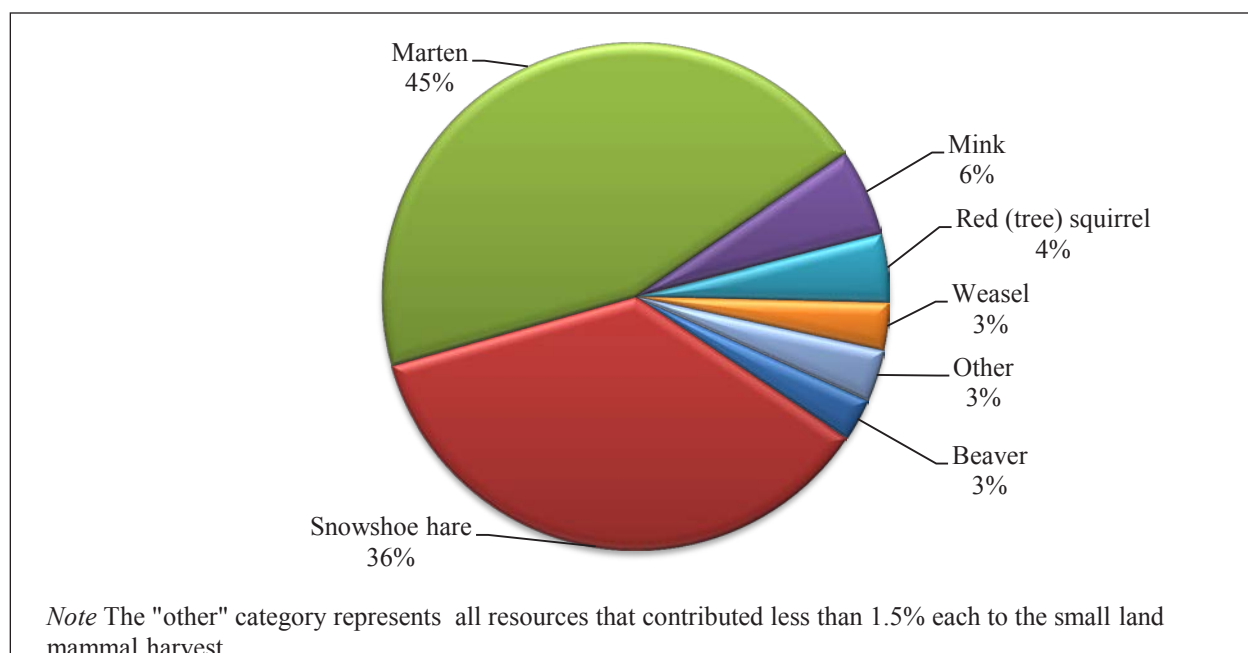


Figure 2-30.—Hunting locations of brown and black bear; Yakutat, 2015.





*Figure 2-31.—Composition of small land mammal/furbearer harvest by individual animals harvested, Yakutat, 2015.*

### **Small Land Mammals/Furbearers**

Nearly 856 lb of edible small land mammals were harvested in 2015 (Table 2-11). Including species that were not eaten, marten composed 45% of the harvest (390 animals) while snowshoe hare (which were eaten) contributed 36% (314 animals); no other species composed more than 6% of the harvest (Figure 2-31; Table 2-11). Apart from snowshoe hare, the other species harvested for food included beaver and red (tree) squirrel (Table 2-11). The majority of small land mammals were harvested during December (222), November (177), and January (169), which is driven largely by the timing of the marten harvest (Table 2-19). Snowshoe hares were harvested throughout the year, except June, but most frequently in August and September (60 animals each). Small land mammals were not widely shared among Yakutat households. Overall, 6% of households gave away some small land mammals and 2% received them (Table 2-11). Snowshoe hare was the most commonly given with 4% of households sharing them, but only 1% receiving. In general, households that attempted to harvest species in this resource category were mostly successful; the harvest of gray wolves was the least successful with 4% of households attempting to harvest them and 1% actually doing so.

Small land mammals were harvested along the road system to Harlequin Lake and toward the Situk River, as well as along the coastline near Ocean Cape (Figure 2-32).

Table 2-19.—Estimated small land mammal/furbearer harvests by month, Yakutat, 2015.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
<b>All small land mammals</b>	<b>169.1</b>	<b>93.1</b>	<b>2.4</b>	<b>14.3</b>	<b>11.9</b>	<b>0.0</b>	<b>2.4</b>	<b>69.5</b>	<b>60.0</b>	<b>47.9</b>	<b>176.5</b>	<b>221.5</b>	<b>0.0</b>	<b>868.5</b>
Beaver	4.8	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	4.8	0.0	<b>23.8</b>
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	<b>2.4</b>
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>
Snowshoe hare	36.0	43.2	2.4	4.8	2.4	0.0	2.4	60.0	60.0	38.4	38.4	26.4	0.0	<b>314.4</b>
North american river (land) otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5	0.0	<b>9.5</b>
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	<b>2.4</b>
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>
Marten	121.2	26.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	109.3	133.1	0.0	<b>389.7</b>
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	24.0	0.0	<b>48.0</b>
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>
Red (tree) squirrel	0.0	0.0	0.0	9.5	9.5	0.0	0.0	9.5	0.0	9.5	0.0	0.0	0.0	<b>38.0</b>
Weasel	7.1	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.9	0.0	<b>26.1</b>
Gray wolf	0.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<b>4.8</b>
Wolverine	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	0.0	<b>9.5</b>

Source ADF&G Division of Subsistence household surveys, 2016.

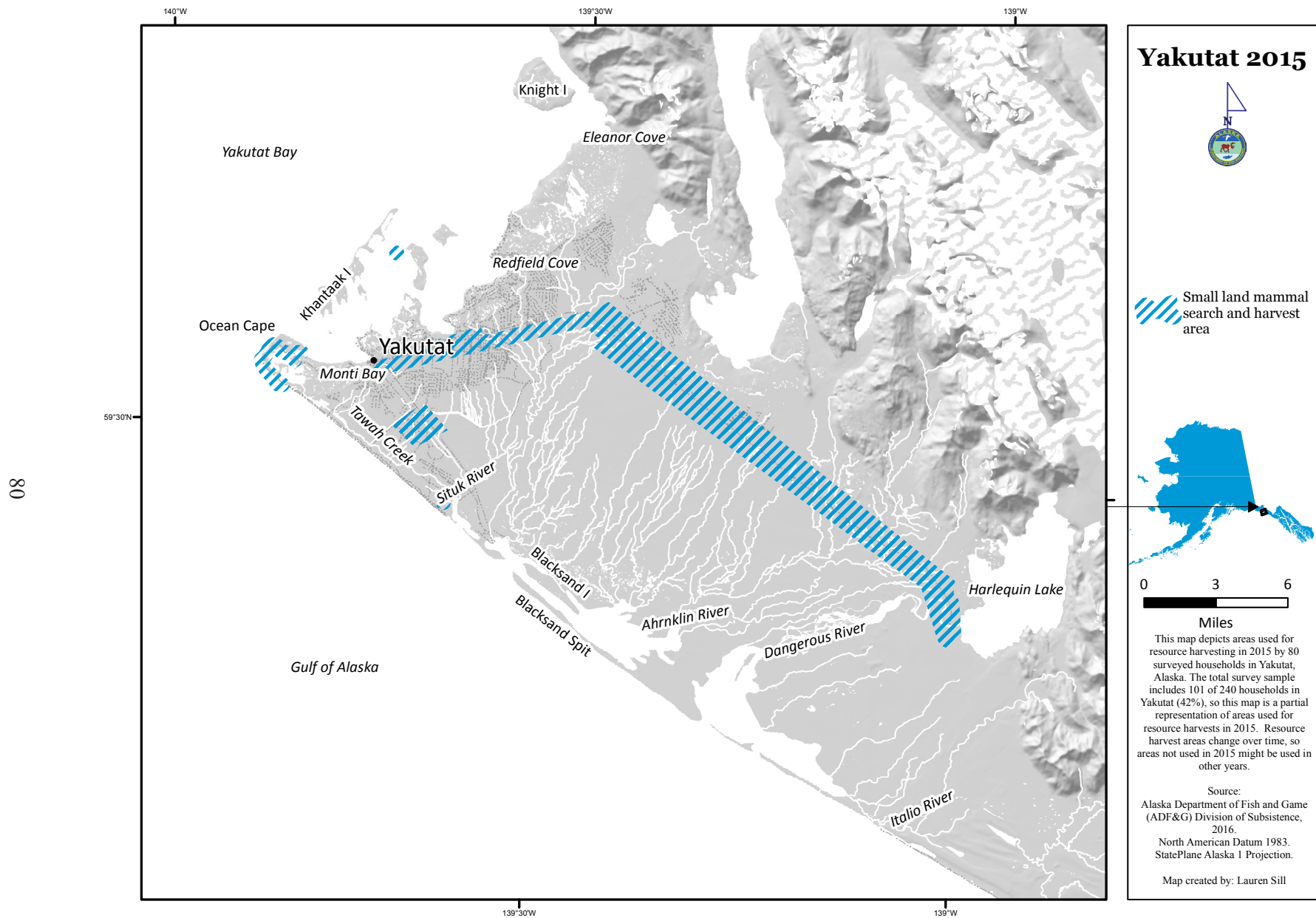


Figure 2-32.—Hunting and trapping locations of small land mammals, Yakutat, 2015.

Table 2-20.—Estimated marine mammal harvests by month and sex, Yakutat, 2015.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
<b>All marine mammals</b>	<b>19.0</b>	<b>14.3</b>	<b>66.5</b>	<b>95.0</b>	<b>83.2</b>	<b>78.4</b>	<b>59.4</b>	<b>59.4</b>	<b>64.2</b>	<b>78.4</b>	<b>47.5</b>	<b>16.6</b>	<b>11.9</b>	<b>693.9</b>
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Harbor seal	19.0	14.3	30.9	38.0	38.0	30.9	28.5	30.9	35.6	30.9	23.8	11.9	11.9	<b>344.6</b>
Harbor seal, male	4.8	9.5	14.3	23.8	19.0	16.6	14.3	16.6	21.4	14.3	9.5	7.1	7.1	<b>178.2</b>
Harbor seal, female	7.1	4.8	14.3	14.3	19.0	14.3	14.3	14.3	14.3	14.3	11.9	4.8	4.8	<b>152.1</b>
Harbor seal, unknown sex	7.1	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.4	0.0	0.0	<b>14.3</b>
Unknown seal oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sea otter	0.0	0.0	35.6	57.0	45.1	47.5	30.9	28.5	28.5	47.5	23.8	4.8	0.0	<b>349.3</b>
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steller sea lion, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steller sea lion, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steller sea lion, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown whale	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2016.

## Marine Mammals

Harvests of marine mammals are restricted to Alaska Natives according to the Marine Mammal Protection Act. Harbor seals composed the entirety of the edible marine mammal harvest in 2015 (345 seals; 33 lb per capita) (Table 2-11). Sea otter was the only other species harvested, with 349 animals harvested. Marine mammals were harvested throughout the year; no sea otters were harvested in January or February (Table 2-20). Slightly more than one-half of the harbor seals harvested were males. Half of Yakutat households used marine mammals while 18% harvested them (Table 2-11). Most households that attempted to harvest marine mammals were successful, though some households were unsuccessful in their seal hunt. While some sea otters were shared (5% of households giving and 3% receiving), the majority of the sharing was of seal with 15% of households giving seal and 39% sharing seal.

In 2015, seals and sea otters were hunted in similar locations (Figure 2-33). The waters of Yakutat Bay near the community as well as the waters of the Gulf of Alaska toward the Situk River were hunted for both harbor seal and sea otter. Harbor seals were additionally hunted in Disenchantment Bay, in and near the ice coming off of the glacier.

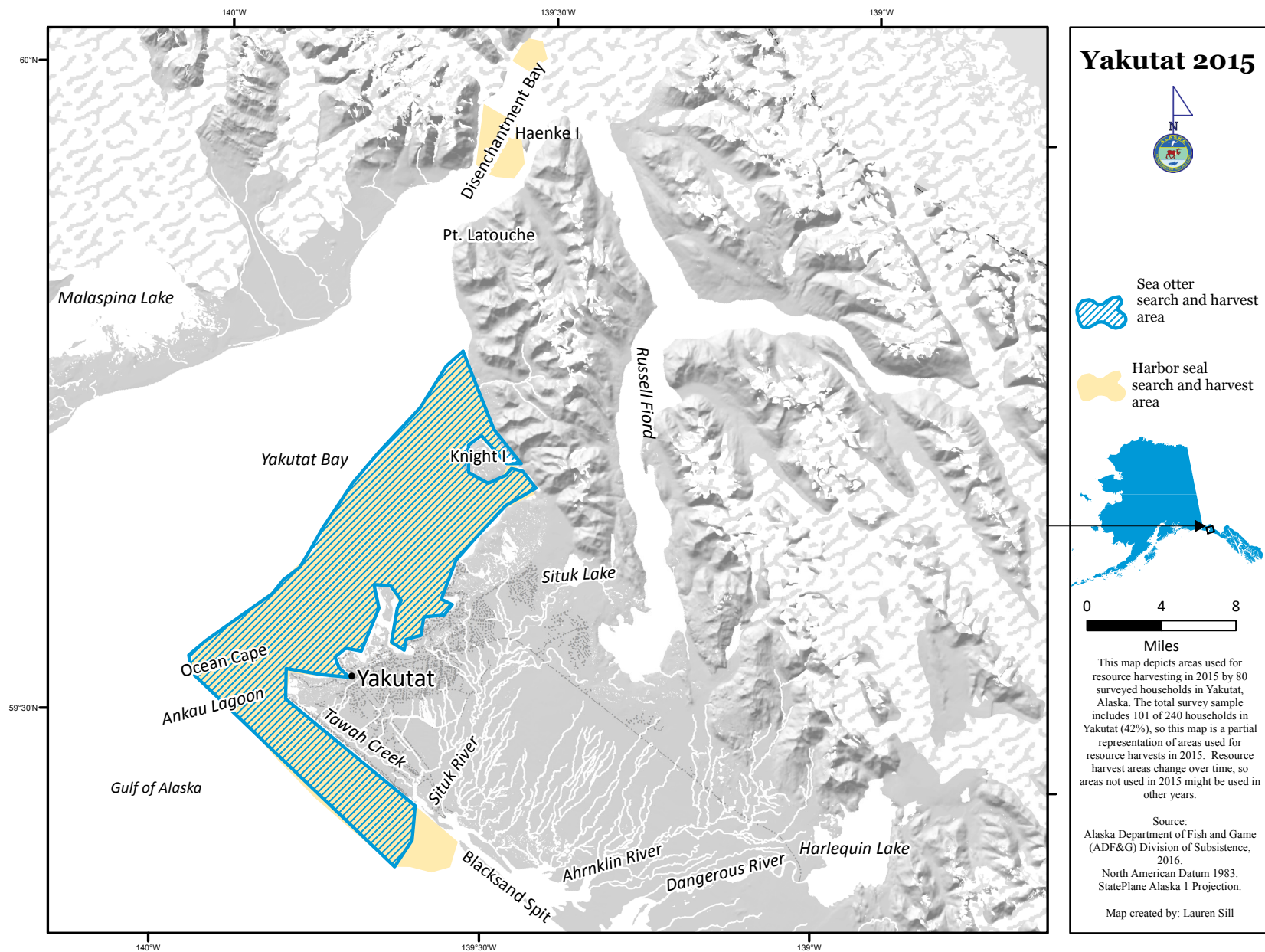


Figure 2-33.—Hunting locations of sea otters and harbor seals, Yakutat, 2015.



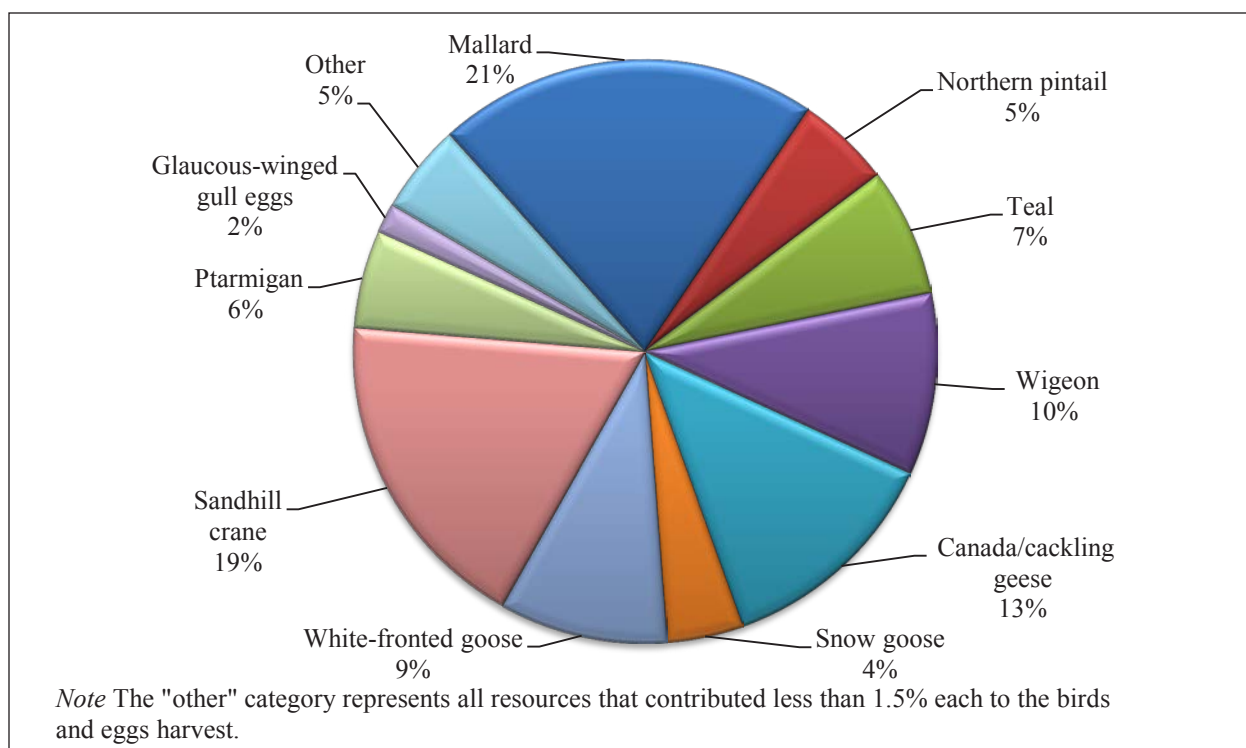


Figure 2-34.—Composition of bird and bird egg harvest in pounds usable weight, Yakutat, 2015.

## Birds and Eggs

In 2015, Yakutat households harvested migratory waterfowl, upland game birds, and bird eggs (2,357 lb total). Mallard and sandhill crane contributed the most to the overall birds and eggs harvest by weight with 21% and 19%, respectively (Figure 2-34). Geese (Canada, white-fronted, and snow) composed 26% of the harvest combined. The remaining harvest was made up of wigeon (10%), teal (7%), ptarmigan (6%), northern pintail (5%), and glaucous-winged gull eggs (2%), and other birds and eggs combined contributed just 5%. A total of 1,003 ducks were harvested, compared to 228 geese and 159 ptarmigan (Table 2-11). Most of the bird egg harvest was of tern eggs (383 eggs), but because of their larger size, the 299 gull eggs collected accounted for a larger percentage of the harvest by weight (70 lb of gull eggs versus just 19 lb of tern eggs). Under the Migratory Bird Treaty Act and associated regulations, Yakutat residents are only allowed to harvest gull eggs,<sup>4</sup> but the harvest of tern eggs has long occurred from a nesting colony not far from the community.<sup>5</sup> All birds except ptarmigan were harvested during the fall season (September through December); almost all ptarmigan were harvested during the winter months of January through April (Table 2-21). Overall, 4 lb of birds and eggs per capita were harvested (Table 2-11). Birds and eggs were used by approximately 41% of households, while 28% attempted to harvest them and 23% successfully did so. Most households that attempted to harvest any given species of bird or egg were successful in doing so. Mallards and teals were harvested by the most households (12% and 10%, respectively). Overall, 14% of households

4. Federal Register 80, no. 35 (February 23, 2015): 9392–9398: <https://www.fws.gov/alaska/ambcc/Regs/AK%20MB%20Subsistence%20-%202015%20-%20final.pdf> (accessed May 2017).

5. In 2009, the U.S. Fish and Wildlife Service opened a season for harvesting Aleutian and Arctic tern eggs in the Yakutat harvest area but removed that provision in the 2010 regulations. Federal Register 74, no. 95 (May 19, 2009): 23336–23349: <https://www.fws.gov/alaska/ambcc/Regs%20-%2004%20pages/AK%20Subsistence%20-%202009%20Final.pdf> (accessed June 2017) and Federal Register 75, no. 70 (April 13, 2010): 18764–18773: <https://www.gpo.gov/fdsys/pkg/FR-2010-04-13/pdf/2010-8382.pdf> (accessed June 2017).

Table 2-21.—Estimated bird harvests by season, Yakutat, 2015.

Resource	Estimated harvest by season					Total
	Spring	Summer	Fall	Winter	Season unknown	
<b>All birds</b>	<b>0.0</b>	<b>0.0</b>	<b>1,347.3</b>	<b>154.5</b>	<b>0.0</b>	<b>1,501.8</b>
Canvasback	0.0	0.0	2.4	0.0	0.0	<b>2.4</b>
Unknown goldeneye	0.0	0.0	11.9	0.0	0.0	<b>11.9</b>
Mallard	0.0	0.0	311.3	0.0	0.0	<b>311.3</b>
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>
Northern pintail	0.0	0.0	102.2	0.0	0.0	<b>102.2</b>
Unknown scaup	0.0	0.0	11.9	0.0	0.0	<b>11.9</b>
Unknown teal	0.0	0.0	335.0	0.0	0.0	<b>335.0</b>
Unknown wigeon	0.0	0.0	216.2	0.0	0.0	<b>216.2</b>
Unknown ducks	0.0	0.0	11.9	0.0	0.0	<b>11.9</b>
Dusky Canada goose	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>
Unknown Canada/cackling geese	0.0	0.0	106.9	0.0	0.0	<b>106.9</b>
Snow goose	0.0	0.0	35.6	0.0	0.0	<b>35.6</b>
White-fronted goose	0.0	0.0	76.0	0.0	0.0	<b>76.0</b>
Unknown geese	0.0	0.0	9.5	0.0	0.0	<b>9.5</b>
Unknown swans	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>
Sandhill crane	0.0	0.0	80.8	0.0	0.0	<b>80.8</b>
Common snipe	0.0	0.0	11.9	0.0	0.0	<b>11.9</b>
Black oystercatcher	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>
Unknown shorebirds	0.0	0.0	11.9	0.0	0.0	<b>11.9</b>
Unknown loon	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>
Unknown seabirds	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>
Unknown grouse	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>
Unknown ptarmigan	0.0	0.0	4.8	154.5	0.0	<b>159.2</b>
Unknown other birds	0.0	0.0	7.1	0.0	0.0	<b>7.1</b>

Source ADF&G Division of Subsistence household surveys, 2016.

gave away birds or bird eggs and 26% received them. Mallards were shared by the most households (7%), but gull eggs were received by the most (11%). Only 3% of households harvested gull eggs or shared them.

Yakutat residents frequented a few locations to harvest bird eggs in 2015 (Figure 2-35). Blacksand Spit was a popular destination due to its relative accessibility, but Ankau Lagoon was also used, as was Haenke [Egg] Island. Migratory waterfowl were harvested throughout the islands offshore from Yakutat and into Ocean Cape, as well as along the road system and at the mouths of the nearby rivers, such as the Situk, Ahrnklin, and Italio (Figure 2-36). Further from the community, migratory birds were hunted to the west of Icy Bay and Cape Yakataga, around the area of the Tsiu River. Upland game birds were hunted near Harlequin Lake and near Situk Lake.

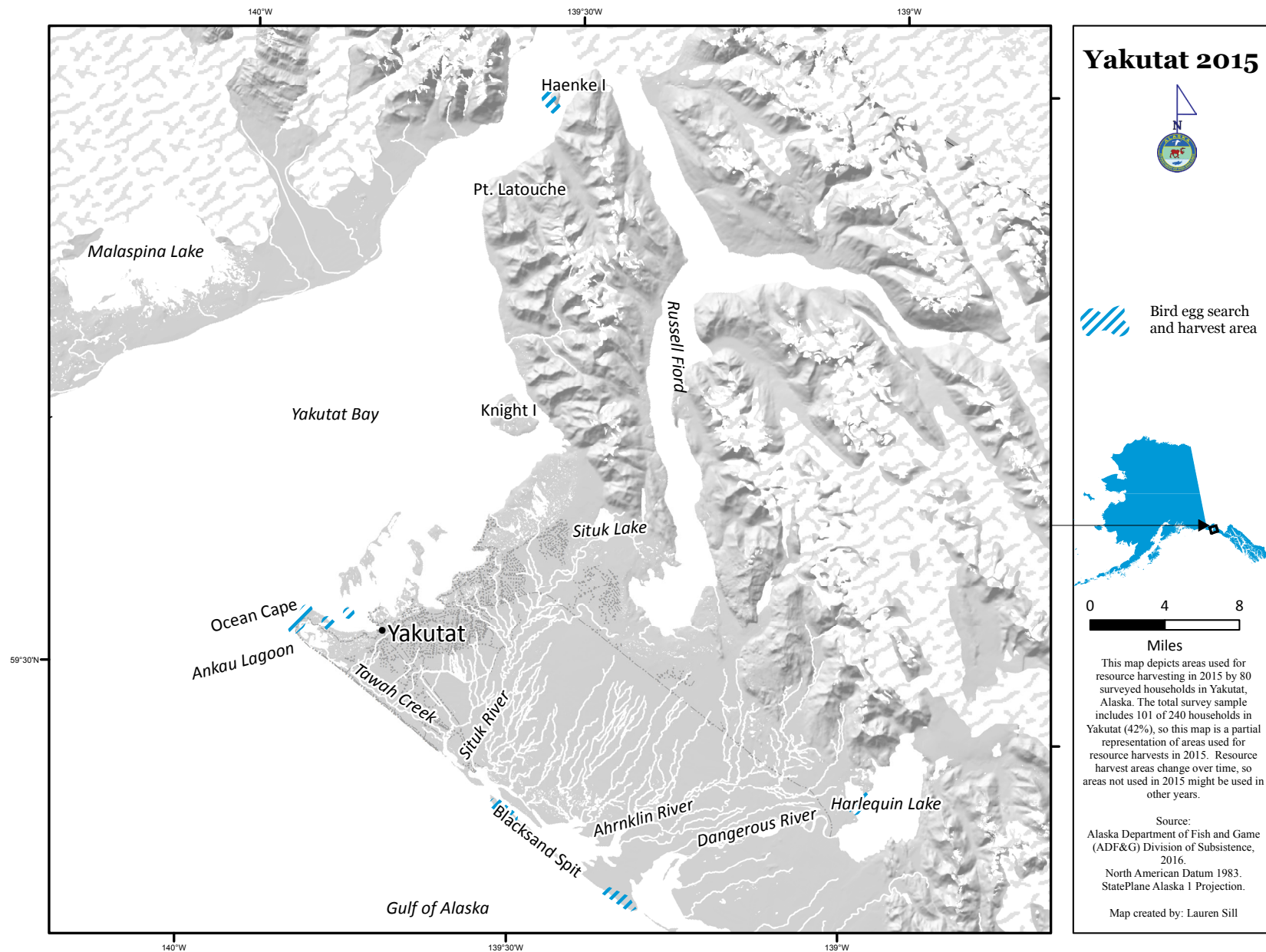


Figure 2-35.—Gathering and harvest locations of bird eggs, Yakutat, 2015.



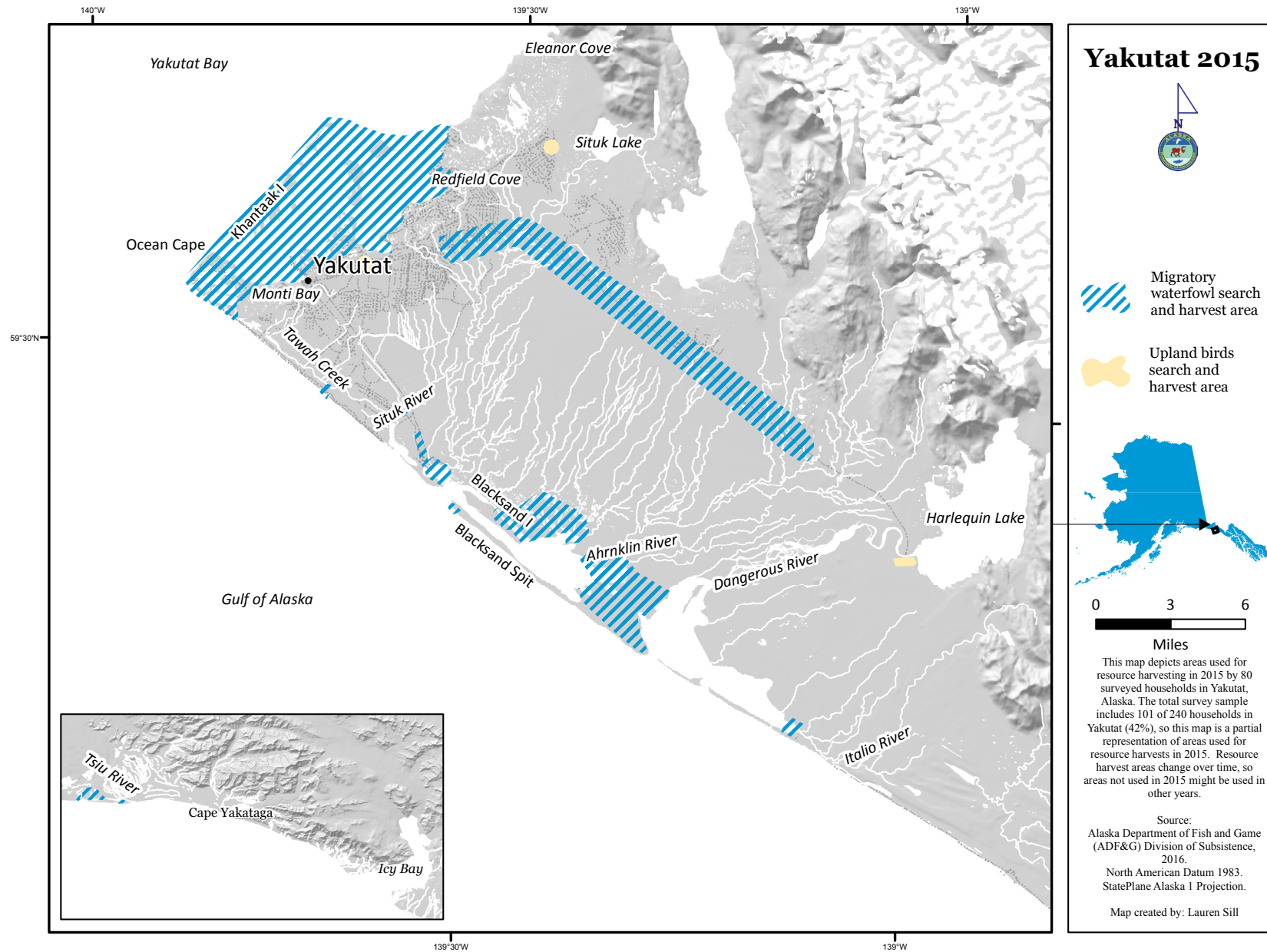


Figure 2-36.—Hunting and harvest locations of migratory waterfowl and upland game birds, Yakutat, 2015.

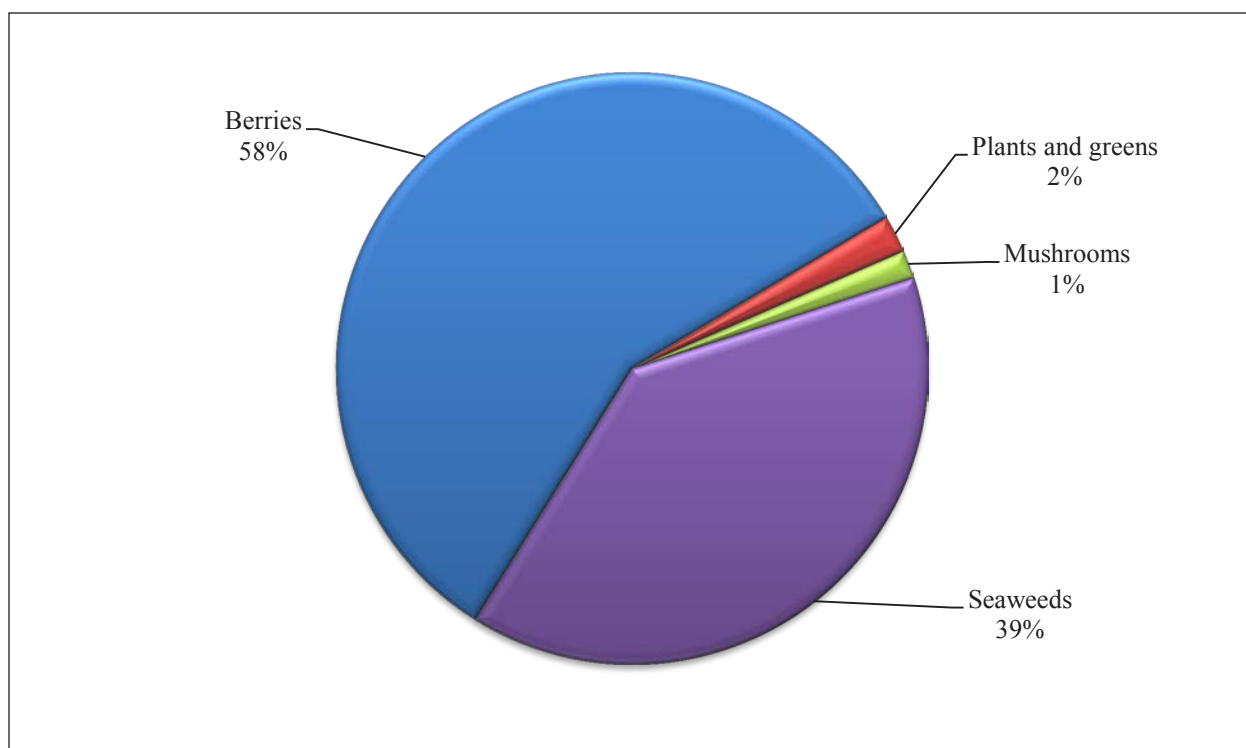


Figure 2-37.—Composition of vegetation harvest by type in pounds usable weight, Yakutat, 2015.

## Vegetation

More than 14,500 lb of vegetation was harvested in 2015 (Table 2-11). By weight, the majority (58%) of this was berries (8,381 lb), followed by seaweeds at 39% (5,657 lb), with plants/greens and mushrooms contributing 2% and 1% to the harvest, respectively (Figure 2-37). For berries, salmonberries were harvested in the greatest quantity (2,789 lb; 5 lb per capita), followed closely by blueberries with 2,044 lb (4 lb per capita) and strawberries with 1,676 lb (3 lb per capita) (Table 2-11). Among the seaweeds, black seaweed was harvested the most (3,114 lb; 5 lb per capita), but households also harvested a lot of red sea ribbons<sup>6</sup> (2,229 lb; 4 lb per capita). While vegetation was one of the most used categories of resources, in particular salmonberries, strawberries, and blueberries were used by more than one-half of the community. Salmonberries and strawberries were given by the greatest percentage of households (35% and 31%), while black seaweed was received by the most households (22%). In general, households that attempted to harvest vegetation (87%) were successful (80%); some households that attempted to harvest berries, specifically blueberries, lowbush cranberries, or nagoonberries, were unsuccessful, but more frequently it was the households attempting to harvest seaweeds that were not able to do so.

Driftwood is collected at local beaches and used for firewood in Yakutat. In 2015, 53% of households used firewood, while 42% of households collected or harvested it. Slightly more households, 47%, attempted to harvest firewood. Firewood was given and received by 29% of households (Table 2-11). Approximately one-half of the surveyed households in Yakutat that answered the question about firewood used for home heating do not rely on firewood for their home heating needs and only 9% rely on it exclusively (Table 2-22).

6. During survey administration, there was some confusion about identifying seaweed species. The survey listed both sea ribbons and red seaweed; some survey administrators recorded harvest information for one of the locally harvested species of seaweed under red seaweed, while others recorded harvests under sea ribbons.

Table 2-22.—Use of firewood for home heating, Yakutat, 2015.

Percentage of home heating from firewood	Number of responding households	Percentage of responding households
0%	50	50.5%
1–25%	14	14.1%
26–50%	9	9.1%
51–75%	13	13.1%
76–99%	4	4.0%
100%	9	9.1%

*Source* ADF&G Division of Subsistence household surveys, 2016.

Berries were picked throughout the Yakutat area in 2015 (Figure 2-38). The coasts, the road system, and the river systems were all used as access to berry picking locations. Plants were harvested in a smaller geographic area, concentrating on the islands offshore of Yakutat, the Ankau Lagoon area, and along Tawah Creek and the Situk River. Other vegetation like mushrooms was harvested along the road system, while firewood was found along the beaches (Figure 2-39). Seaweeds were collected mainly around Ocean Cape, but also further up Yakutat Bay near Point Latouche.

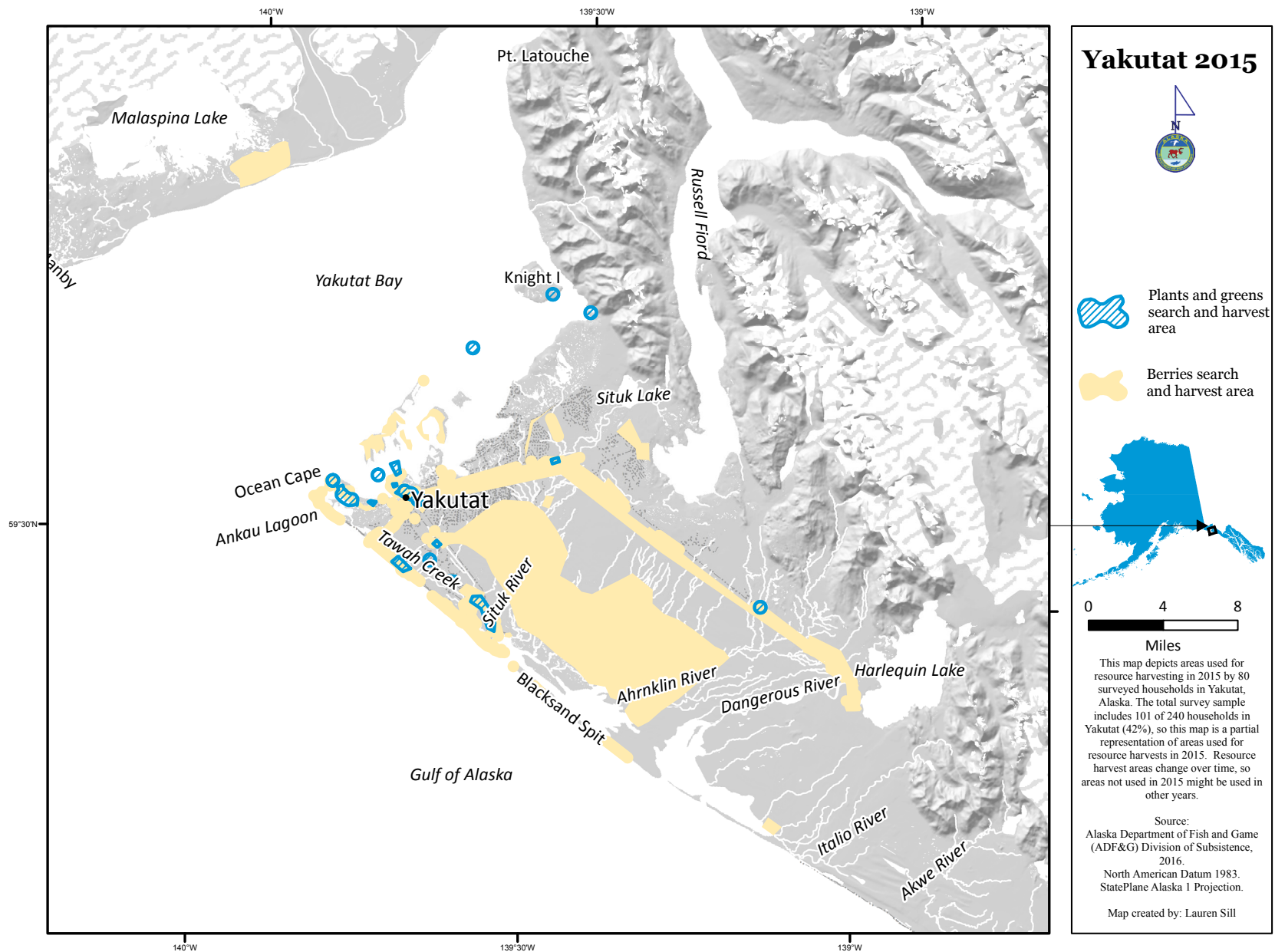


Figure 2-38.—Gathering and harvest locations of plants and greens, and berries, Yakutat, 2015.

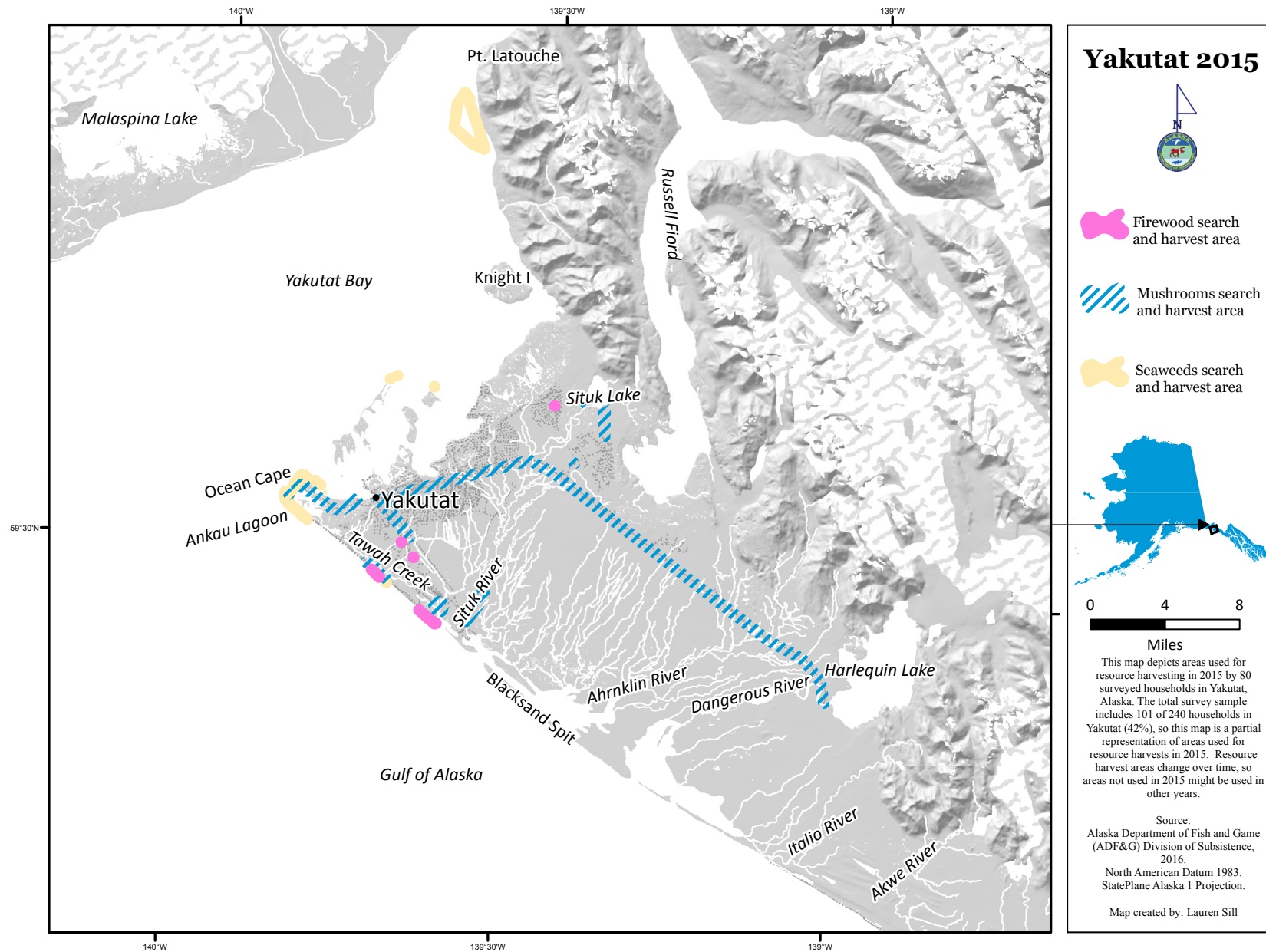


Figure 2-39.—Gathering and harvest locations of firewood, mushrooms, and seaweeds, Yakutat, 2015.



## ETHNOGRAPHIC FINDINGS

Along with the harvest survey instrument, researchers for this study engaged in several activities designed to collect qualitative data. This included key respondent interviews and participant observation. Information from the key respondent interviews has been included in the discussions on specific resource categories, changes in harvest estimates and areas over time, and local comments and concerns. A brief overview of the participant observation activities will be provided here.

### Participant Observation Summary

Participant observation allows for direct observation of harvest patterns and associated knowledge, resource processing and preservation, as well as distribution patterns. It also allows for the acquisition of in-depth local and traditional knowledge regarding specific local resources, including the challenges associated with harvest practices and changes to the available resources and their habitats over time. Through participant observation, researchers are better able to understand nuances associated with wild resource harvests that cannot be fully captured through verbal dissemination. For this study, researchers observed marine mammal hunting activities in Yakutat and Disenchantment bays, subsistence harvesting of salmon from the Situk River, and commercial harvesting and processing of salmon from the Alsek River in Dry Bay. Knowledgeable key respondents were chosen based on their engagement in and knowledge of these activities in Yakutat, as well as their willingness to share their knowledge for inclusion in this work.

### *Seal Hunting in Yakutat and Disenchantment Bays*

Two ADF&G researchers, Joshua Ream and Malla Kukkonen, observed a marine mammal hunt in Yakutat and Disenchantment bays on April 10, 2016. Researchers accompanied 2 knowledgeable Alaska Native hunters for an all-day hunt. Two boats were taken as a safety precaution, especially since the hunters were heading a long distance into Disenchantment Bay. Both hunters primarily hunt in Yakutat Bay but occasionally visit Disenchantment Bay where seals utilize ice flows as pupping grounds. They decided to hunt in Disenchantment Bay on this trip to show the researchers traditional hunting areas, other areas of harvest importance (such as Egg [Haenke] Island), and concerns regarding landscape change at and near the Hubbard Glacier. A single sea otter, but no seals, was harvested during the participant observation.

The search for harbor seals began immediately upon leaving the dock and continued throughout the day. The course of travel was north along the eastern side of Yakutat Bay and within a mile of the shoreline, a route that is partially protected by small islands and the bay's orientation to the open ocean. While seals were sought opportunistically throughout the trip, most active searching took place in Disenchantment Bay. No seals were spotted in Disenchantment Bay, however, and both hunters explained that this is highly unusual—it was the first time that either of them remembered not seeing a seal in this area. The hunters speculated that this could be due to increased sea lion activity in the area.

The return trip followed a similar path along the coast of Yakutat Bay, passing several groups of marine mammals, including porpoises, whales, sea lions, and sea otters. One hunter successfully harvested a large sea otter with a small-caliber rifle. He pulled the sea otter into the boat and later skinned it on a beach. The hunter explained that while people traditionally would eat the backstrap, today most people do not eat sea otter meat. While several seals were spotted between Knight Island and Yakutat, none were successfully harvested. However, one hunter had killed 2 seals several days prior, and was able to show the researchers the process of skinning and butchering these animals. The seals had been submerged in seawater at the end of the dock for 2 days prior in order to harden the fat, keep the meat fresh, remove blood from the fur, and make them easier to skin. After removal and washing of the pelts, the carcasses were divided into 6 sections for distribution to residents of the community (primarily elders).

There are a variety of color shades of harbor seals in Yakutat. One hunter, who also sells handicrafts made of furs, explained that his clients really like the lighter-colored furs, especially for vests and regalia. He said that darker furs are rarer in the Yakutat area and that these are often preferred for hats. He stated that one seal can usually be made into 3 hats or 1 vest or piece of regalia. The hunter also explained that a challenging aspect of selling products made from seal and sea otter pelts is the logistical and financial

expense associated with the tanning process. He uses commercial tanning facilities for his products and these are located in both Sitka and Anchorage. Shipping expenses and chemical disposal expenses both have significant implications for cost.

### ***Subsistence Fishing on the Situk River***

Researchers Lauren Sill and Joshua Ream observed subsistence salmon gillnetting activities at Strawberry Point, a popular area for subsistence sockeye salmon fishing, on the morning of June 18, 2016. While the researchers were not able to be present for the harvest activities, they were able to discuss the day's experiences with various fishing parties while observing processing activities. Fishing was slow on this day and few people were subsistence fishing at this location. Fishing for Chinook salmon in Yakutat Bay had recently picked up and a commercial opener was happening the following day, 2 reasons for why so few subsistence fishers were found on this day. However, researchers encountered 2 fishing parties returning from successful fishing trips. Both parties had fished through the change in tides. One group of fishers indicated that the fish were bigger than those harvested in the previous year and that differences in the origins of local sockeye salmon can be partially discerned by their color.

The fish were gutted in the back of a pickup truck that was backed in near the water's edge. Entrails were flung into the river or onto the beach and were quickly consumed by nearby eagles and gulls. A board with a nail was used to secure the head for processing. Eggs were retained for kids and spouses. No ice was used though the fish were periodically cooled with river water. Processed fish were stored in coolers. The fishers indicated that they would likely keep about one-half of their catch for their immediate families and distribute the rest among extended family and friends in the community.

### ***Commercial Fishing on the Alsek River***

Researcher Joshua Ream observed the commercial set-gillnet salmon fishery on the Alsek River in Dry Bay between June 18 and June 20, 2016. Fishery openers in this river are open for 24 hours, with the potential to remain open for an additional 48 hours depending on the strength of the run. Dry Bay is approximately 50 miles south of Yakutat and is most frequently accessed via plane. A public gravel landing strip is available in the area and fish buying facilities are present. Other private landing strips are distributed throughout the area, primarily in the vicinity of privately owned cabins.

The first night was spent in a privately owned cabin to the south of the Alsek River within Glacier Bay National Preserve. The researcher spent the evening with his hosts and other local cabin owners and residents, discussing at length the challenges associated with maintaining cabins in the preserve, especially in terms of: 1) the high cost of annual permitting by the NPS, and 2) regulations that restrict cabin usage outside of the commercial salmon season.

The commercial opener occurred at noon the following day. The first of 4 nets 25 fathoms in length were set at 12:01 p.m.; 3 were set within the river and the fourth was closer to the confluence of the river and the open ocean. This latter location was much more challenging to access given the large and frequent waves and the small size of the boat; this net was eventually moved into the river. Each net was visited periodically throughout the day to remove any caught fish and to deter nearby seals by making noise and firing warning shots. All fish that were caught quickly had their gills ripped and were placed in large plastic bins containing cold river water and glacial ice.

By midafternoon approximately 100 sockeye salmon and a single Chinook salmon had been caught. These fish were processed in a small processing facility; with the help of one of the fishers' wife and daughter, the heads and entrails of the fish were removed, the fish were washed and placed in ice-filled containers in the next room, sorted by a determined quality grade. The water was filtered, cold, and treated with small amounts of chlorine to meet health protocols. This small buyer/processor facility was unique to the area since most other participants in this fishery sell to a single larger-scale commercial buyer in the area.

Rotations to and from the nets and processing facility happened several times throughout the rest of the day. Nets were attended until about 10 p.m. and were left in the water overnight. Nets are not commonly checked during the night because there is very little light, and there are floating trees and other hazards, all of which

make river travel unsafe. At 4:30 a.m. the next morning, the fishers returned to the nets. Many of them were filled with wood and other debris that had to be removed. Approximately 20 fish were caught overnight. The fishers explained that the dead fish, upon being picked from the net, were less fresh and less aesthetically pleasing than the appearance of those fish that were removed quickly following capture. There were also more than a dozen fish heads in the net, the rest of the bodies having been eaten by seals. All salvageable fish were brought to the processing plant quickly. Net attendance continued through 9 a.m., at which point all fishery permittees were required to report their harvest to ADF&G so that a determination could be made regarding an extension to the opener. A decision was made that the fishery would not be extended, so the researcher traveled back to the public airstrip to observe the delivery of fish to a buyer/processor. Almost all of the fishery participants arrived via all-terrain vehicle with their fish in coolers and totes. The fish were weighed and each person's harvest was recorded. The fish were then put in larger totes and prepared for transport back to Yakutat via small plane, which also accommodated the researcher.

## ***Conclusion***

The 3 participant observation experiences summarized here provide but a small amount of the detail documented for each. By engaging with local people in these activities, researchers may better understand the regulatory, logistical, and financial challenges associated with the harvests of wild resources. It is also clear that extensive local and traditional knowledge of place is necessary for safe and effective harvest of wild foods.

## **COMPARING HARVESTS AND USES IN 2015 WITH PREVIOUS YEARS**

### **Harvest Assessments**

Researchers asked respondents to assess their own harvests in 2 ways: whether they got more, less, or about the same amount of 10 resource categories in 2015 as in the past 5 years, and whether they got “enough” of each of the 10 resource categories. Households also were asked to provide reasons if their use was different or if they were unable to get enough of a resource. If they did not get enough of a resource, they were asked to evaluate the severity of the impact to their household as a result of not getting enough. They were further asked whether they did anything differently (such as supplement with store-bought food or switch to a different subsistence resource) because they did not get enough. This section discusses responses to those questions.

Together, Table 2-23 and Figure 2-40 and Figure 2-41 provide a broad overview of households' assessments of their harvests in 2015. Because not everyone uses all resource categories, some households did not respond to the assessment questions. Additionally, some households that do typically use a resource category simply did not answer questions.

Salmon is the most harvested of all subsistence resource categories used by Yakutat households. Forty-nine percent of responding households explained that they used the same amount of salmon in 2015 as they did in previous years, 40% reported that they used less, and 10% said they used more (Table 2-23; Figure 2-40). When asked why they used less, 32% of respondents reported that they did so due to working or lack of time (Table 2-24). Other stated reasons for using less salmon included family/personal reasons, resource less available, or lack of effort (22% of respondents). For those households that used more salmon in the study year, the main reasons given were that there was more sharing, increased effort to harvest, more success, or that the households needed more (Table 2-25). In Yakutat, 33% of sampled respondents stated that they did not get enough salmon (Figure 2-41). When households that did not get enough salmon were asked to evaluate the impact of not getting enough, 49% described the impact as minor, 42% explained that not getting enough salmon had a major effect on their household, and 9% stated that the impact was severe (Table 2-26).



Table 2-23.—Changes in household uses of resources compared to recent years, Yakutat, 2015.

Resource category	Sampled households	Valid responses <sup>a</sup>	Households reporting use								Households not using	
			Total households		Less		Same		More			
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	101	101	100	99.0%	86	85.1%	93	92.1%	41	40.6%	87	86.1%
All resources	101	100	99	99.0%	45	45.0%	41	41.0%	13	13.0%	1	1.0%
Salmon	101	101	99	98.0%	40	39.6%	49	48.5%	10	9.9%	2	2.0%
Nonsalmon fish	101	100	95	95.0%	32	32.0%	52	52.0%	11	11.0%	5	5.0%
Large land mammals	101	100	95	95.0%	44	44.0%	39	39.0%	12	12.0%	5	5.0%
Small land mammals	101	101	33	32.7%	10	9.9%	20	19.8%	3	3.0%	68	67.3%
Marine mammals	101	101	61	60.4%	21	20.8%	32	31.7%	8	7.9%	40	39.6%
Birds	101	101	43	42.6%	16	15.8%	22	21.8%	5	5.0%	58	57.4%
Bird eggs	101	100	39	39.0%	22	22.0%	14	14.0%	3	3.0%	61	61.0%
Marine invertebrates	101	100	88	88.0%	47	47.0%	35	35.0%	6	6.0%	12	12.0%
Vegetation	101	99	94	94.9%	36	36.4%	50	50.5%	8	8.1%	5	5.1%
Seaweed	101	100	66	66.0%	19	19.0%	43	43.0%	4	4.0%	34	34.0%

Source ADF&G Division of Subsistence household surveys, 2016.

a. Valid responses do not include households that did not provide any response.

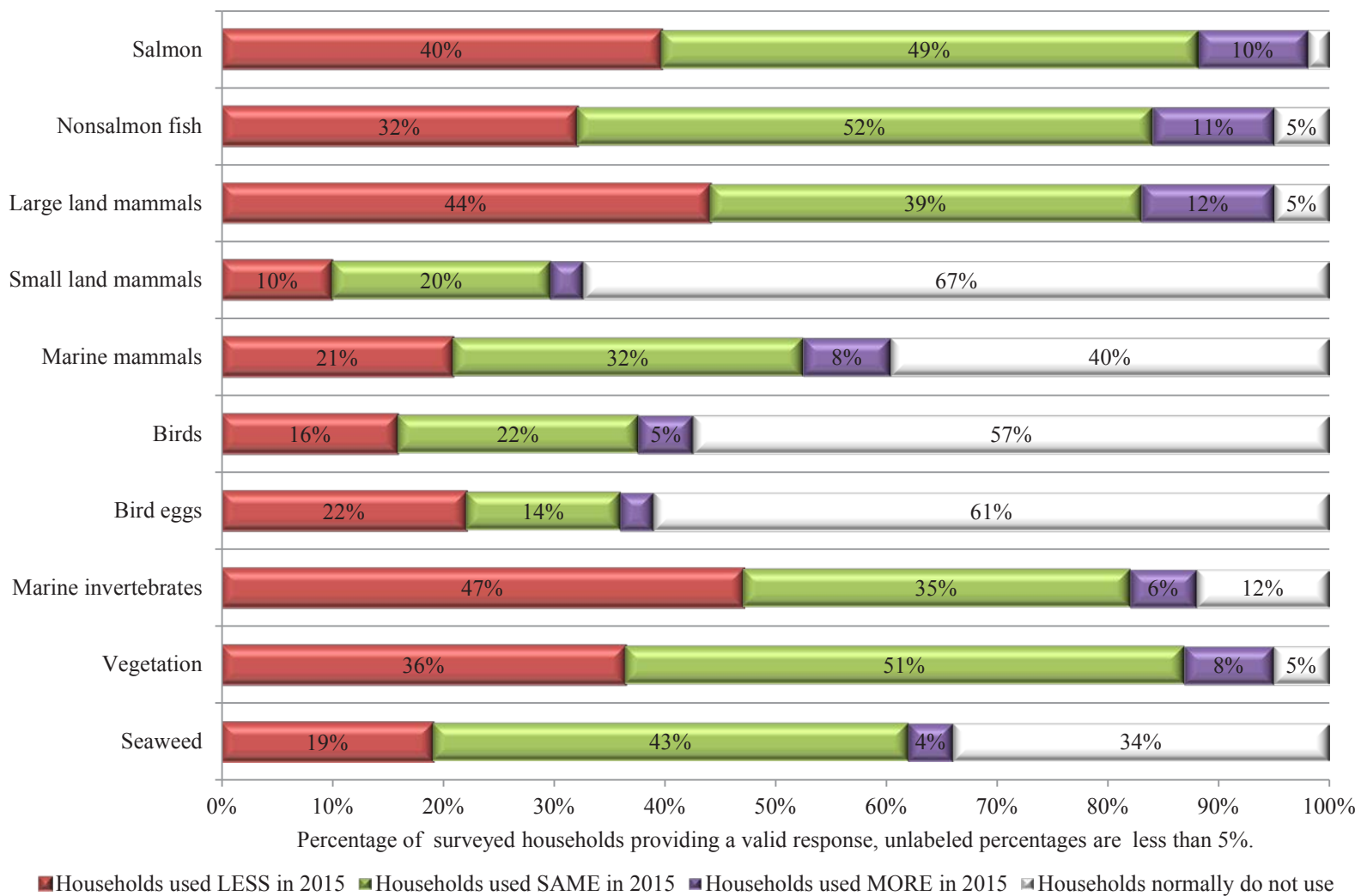


Figure 2-40.—Changes in household uses of resources compared to recent years, Yakutat, 2015.

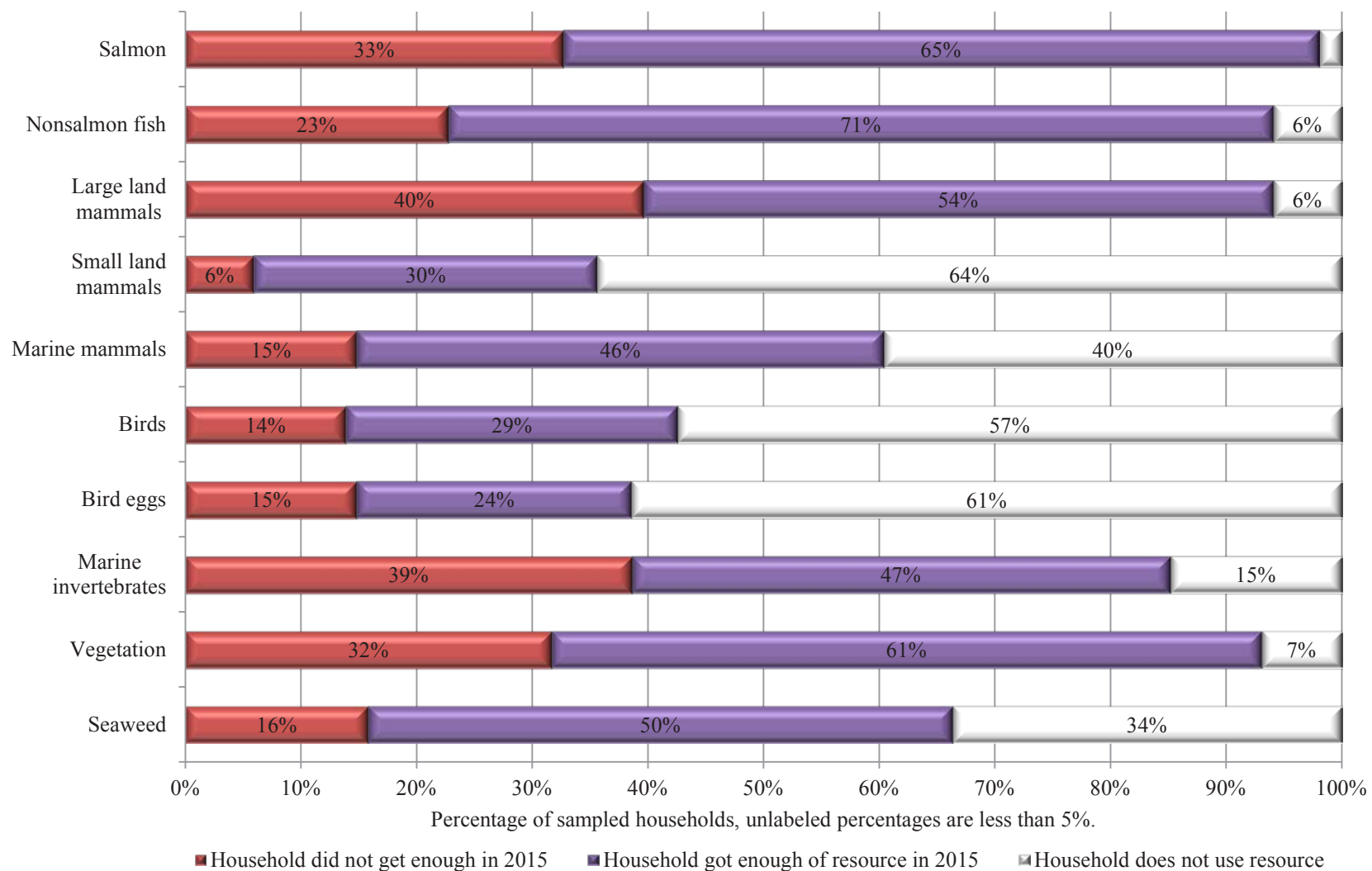


Figure 2-41.—Percentage of sampled households reporting whether they had enough resources, Yakutat, 2015.

Table 2-24.—Reasons for less household uses of resources compared to recent years, Yakutat, 2015.

Resource category	Valid responses <sup>a</sup>	Households reporting reasons for less use	Family/ personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
<b>Any resource</b>	<b>101</b>	<b>84</b>	<b>11</b>	<b>13.1%</b>	<b>30</b>	<b>35.7%</b>	<b>2</b>	<b>2.4%</b>	<b>7</b>	<b>8.3%</b>	<b>33</b>	<b>39.3%</b>	<b>40</b>	<b>47.6%</b>
All resources	100	44	4	9.1%	7	15.9%	0	0.0%	4	9.1%	4	9.1%	10	22.7%
Salmon	101	37	8	21.6%	8	21.6%	0	0.0%	3	8.1%	5	13.5%	8	21.6%
Nonsalmon fish	100	32	4	12.5%	7	21.9%	0	0.0%	2	6.3%	7	21.9%	7	21.9%
Large land mammals	100	42	4	9.5%	5	11.9%	0	0.0%	1	2.4%	9	21.4%	8	19.0%
Small land mammals	101	10	2	20.0%	0	0.0%	0	0.0%	0	0.0%	1	10.0%	3	30.0%
Marine mammals	101	20	0	0.0%	1	5.0%	0	0.0%	0	0.0%	12	60.0%	4	20.0%
Birds	101	15	1	6.7%	1	6.7%	0	0.0%	1	6.7%	5	33.3%	6	40.0%
Bird eggs	100	21	0	0.0%	2	9.5%	1	4.8%	0	0.0%	5	23.8%	8	38.1%
Marine invertebrates	100	44	5	11.4%	13	29.5%	0	0.0%	4	9.1%	6	13.6%	7	15.9%
Vegetation	99	34	5	14.7%	9	26.5%	1	2.9%	1	2.9%	2	5.9%	9	26.5%
Seaweed	100	17	0	0.0%	0	0.0%	0	0.0%	2	11.8%	4	23.5%	6	35.3%

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Table 2-24.—Continued.

Resource category	Valid responses <sup>a</sup>	Households reporting reasons for less use	Unsuccessful		Weather/ environment		Other reasons		Working/ no time		Regulations		Small/ diseased animals	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
<b>Any resource</b>	<b>101</b>	<b>84</b>	<b>19</b>	<b>22.6%</b>	<b>6</b>	<b>7.1%</b>	<b>1</b>	<b>1.2%</b>	<b>31</b>	<b>36.9%</b>	<b>2</b>	<b>2.4%</b>	<b>4</b>	<b>4.8%</b>
All resources	100	44	7	15.9%	1	2.3%	0	0.0%	12	27.3%	0	0.0%	0	0.0%
Salmon	101	37	3	8.1%	0	0.0%	0	0.0%	12	32.4%	0	0.0%	1	2.7%
Nonsalmon fish	100	32	2	6.3%	0	0.0%	0	0.0%	9	28.1%	0	0.0%	0	0.0%
Large land mammals	100	42	12	28.6%	1	2.4%	1	2.4%	4	9.5%	2	4.8%	0	0.0%
Small land mammals	101	10	0	0.0%	0	0.0%	0	0.0%	2	20.0%	0	0.0%	0	0.0%
Marine mammals	101	20	1	5.0%	0	0.0%	0	0.0%	4	20.0%	0	0.0%	0	0.0%
Birds	101	15	1	6.7%	0	0.0%	0	0.0%	2	13.3%	0	0.0%	0	0.0%
Bird eggs	100	21	1	4.8%	1	4.8%	0	0.0%	2	9.5%	0	0.0%	0	0.0%
Marine invertebrates	100	44	1	2.3%	0	0.0%	0	0.0%	10	22.7%	0	0.0%	3	6.8%
Vegetation	99	34	0	0.0%	1	2.9%	0	0.0%	9	26.5%	0	0.0%	0	0.0%
Seaweed	100	17	2	11.8%	2	11.8%	0	0.0%	4	23.5%	0	0.0%	0	0.0%

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Table 2-24.--Page 2 of 2.

Resource category	Valid responses <sup>a</sup>	Households reporting reasons for less use	Did not need		Equipment/fuel expense		Used other resources		Competition	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
<b>Any resource</b>	<b>101</b>	<b>84</b>	<b>17</b>	<b>20.2%</b>	<b>1</b>	<b>1.2%</b>	<b>1</b>	<b>1.2%</b>	<b>1</b>	<b>1.2%</b>
<b>All resources</b>	<b>100</b>	<b>44</b>	<b>3</b>	<b>6.8%</b>	<b>1</b>	<b>0.0%</b>	<b>0</b>	<b>0.0%</b>	<b>0</b>	<b>0.0%</b>
Salmon	101	37	5	15.6%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	100	32	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	100	42	1	10.0%	0	0.0%	0	0.0%	1	10.0%
Small land mammals	101	10	2	5.4%	0	0.0%	1	2.7%	0	0.0%
Marine mammals	101	20	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	101	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	100	21	1	4.8%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	100	44	2	4.5%	1	4.8%	0	0.0%	0	0.0%
Vegetation	99	34	4	11.8%	0	0.0%	0	0.0%	0	0.0%
Seaweed	100	17	1	5.9%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2016.

a. Valid responses do not include households that did not provide any response.

Table 2-25.—Reasons for more household uses of resources compared to recent years, Yakutat, 2015.

Resource category	Valid responses <sup>a</sup>	Households reporting reasons for more use	Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Got/ fixed equipment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
<b>Any resource</b>	<b>101</b>	<b>40</b>	<b>4</b>	<b>10.0%</b>	<b>1</b>	<b>2.5%</b>	<b>0</b>	<b>0.0%</b>	<b>18</b>	<b>45.0%</b>	<b>11</b>	<b>27.5%</b>	<b>15</b>	<b>37.5%</b>	<b>0</b>	<b>0.0%</b>
All resources	100	12	1	8.3%	1	8.3%	0	0.0%	3	25.0%	3	25.0%	3	25.0%	0	0.0%
Salmon	101	10	0	0.0%	0	0.0%	0	0.0%	5	50.0%	1	10.0%	3	30.0%	0	0.0%
Nonsalmon fish	100	10	0	0.0%	0	0.0%	0	0.0%	4	40.0%	2	20.0%	3	30.0%	0	0.0%
Large land mammals	100	11	1	9.1%	1	9.1%	0	0.0%	4	36.4%	3	27.3%	0	0.0%	0	0.0%
Small land mammals	101	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	66.7%	0	0.0%
Marine mammals	101	8	1	12.5%	0	0.0%	0	0.0%	5	62.5%	1	12.5%	3	37.5%	0	0.0%
Birds	101	5	0	0.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	3	60.0%	0	0.0%
Bird eggs	100	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	66.7%	0	0.0%
Marine invertebrates	100	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	75.0%	0	0.0%
Vegetation	99	8	2	25.0%	0	0.0%	0	0.0%	0	0.0%	4	50.0%	1	12.5%	0	0.0%
Seaweed	100	3	0	0.0%	0	0.0%	0	0.0%	1	33.3%	1	33.3%	1	33.3%	0	0.0%

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Table 2-25.—Continued.

Resource category	Valid responses <sup>a</sup>	Households reporting reasons for more use	Other		Regulations		Traveled farther		More success		Substitute for unavaialable resource(s)		Store-bought expense	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
<b>Any resource</b>	<b>101</b>	<b>40</b>	<b>0</b>	<b>0.0%</b>	<b>0</b>	<b>0.0%</b>	<b>0</b>	<b>0.0%</b>	<b>9</b>	<b>22.5%</b>	<b>1</b>	<b>2.5%</b>	<b>0</b>	<b>0.0%</b>
All resources	179	12	0	0.0%	0	0.0%	0	0.0%	4	33.3%	0	0.0%	0	0.0%
Salmon	182	10	0	0.0%	0	0.0%	0	0.0%	1	10.0%	0	0.0%	0	0.0%
Nonsalmon fish	180	10	0	0.0%	0	0.0%	0	0.0%	1	10.0%	0	0.0%	0	0.0%
Large land mammals	180	11	0	0.0%	0	0.0%	0	0.0%	3	27.3%	1	9.1%	0	0.0%
Small land mammals	175	3	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%	0	0.0%
Marine mammals	172	8	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	162	5	0	0.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%
Bird eggs	180	3	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%	0	0.0%
Marine invertebrates	180	4	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%
Vegetation	178	8	0	0.0%	0	0.0%	0	0.0%	1	12.5%	0	0.0%	0	0.0%
Seaweed	179	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&amp;G Division of Subsistence household surveys, 2016.

a. Valid responses do not include households that did not provide any response.

Table 2-26.—Reported impact to households reporting that they did not get enough of a type of resource, Yakutat, 2015.

Resource category	Sampled households	Households not getting enough _____.				Impact to those not getting enough _____.									
		Valid responses <sup>a</sup>		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	101	99	98.0%	38	38.4%	4	10.5%	1	2.6%	11	28.9%	18	47.4%	4	10.5%
Salmon	101	99	98.0%	33	33.3%	0	0.0%	0	0.0%	16	48.5%	14	42.4%	3	9.1%
Nonsalmon fish	101	95	94.1%	23	24.2%	0	0.0%	1	4.3%	15	65.2%	7	30.4%	0	0.0%
Large land mammals	101	95	94.1%	40	42.1%	4	10.0%	2	5.0%	18	45.0%	14	35.0%	2	5.0%
Small land mammals	101	36	35.6%	6	16.7%	0	0.0%	1	16.7%	5	83.3%	0	0.0%	0	0.0%
Marine mammals	101	61	60.4%	15	24.6%	2	13.3%	1	6.7%	7	46.7%	3	20.0%	2	13.3%
Birds	101	43	42.6%	14	32.6%	1	7.1%	2	14.3%	9	64.3%	1	7.1%	1	7.1%
Bird eggs	101	39	38.6%	15	38.5%	1	6.7%	6	40.0%	4	26.7%	2	13.3%	2	13.3%
Marine invertebrates	101	86	85.1%	39	45.3%	1	2.6%	5	12.8%	19	48.7%	12	30.8%	2	5.1%
Vegetation	101	94	93.1%	32	34.0%	1	3.1%	4	12.5%	18	56.3%	4	12.5%	5	15.6%
Seaweed	101	67	66.3%	16	23.9%	0	0.0%	3	18.8%	5	31.3%	5	31.3%	3	18.8%

Source ADF&G Division of Subsistence household surveys, 2016.

a. Valid responses do not include households failing to respond to the question and those households that never used the resource.

Table 2-27.—Things households reported doing differently as the result of not getting enough of a resource, Yakutat, 2015.

Resource category	Valid responses <sup>a</sup>	Bought/bartered		Used more commercial foods		Replaced with other subsistence foods		Asked others for help		Made do without		Increased effort to harvest	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	31	0	0.0%	27	87.1%	0	0.0%	0	0.0%	6	19.4%	0	0.0%
Salmon	24	0	0.0%	14	58.3%	7	29.2%	0	0.0%	1	4.2%	1	4.2%
Nonsalmon fish	17	0	0.0%	13	76.5%	3	17.6%	0	0.0%	2	11.8%	0	0.0%
Large land mammals	32	0	0.0%	28	87.5%	2	6.3%	0	0.0%	3	9.4%	0	0.0%
Small land mammals	3	1	33.3%	1	33.3%	2	66.7%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	4	0	0.0%	2	50.0%	2	50.0%	0	0.0%	0	0.0%	0	0.0%
Birds	4	0	0.0%	3	75.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	4	0	0.0%	3	75.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	18	1	5.6%	13	72.2%	2	11.1%	0	0.0%	3	16.7%	0	0.0%
Vegetation	23	0	0.0%	21	91.3%	0	0.0%	0	0.0%	2	8.7%	0	0.0%
Seaweed	8	2	25.0%	5	62.5%	1	12.5%	0	0.0%	1	12.5%	0	0.0%

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Table 2-27.—Continued.

Resource category	Valid responses <sup>a</sup>	Got a job		Obtained food from other sources		Got public assistance		Other reasons		Conserved resources	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	31	0	0.0%	1	3.2%	0	0.0%	0	0.0%	0	0.0%
Salmon	24	0	0.0%	1	4.2%	1	4.2%	1	4.2%	0	0.0%
Nonsalmon fish	17	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	32	0	0.0%	1	3.1%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	4	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%
Marine invertebrates	18	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	23	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Seaweed	8	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	12.5%

Source ADF&G Division of Subsistence household surveys, 2016.

a. Valid responses do not include households failing to respond to the question and those households that never used the resource.



Table 2-28.—Resources that households reported needing, Yakutat, 2015.

Resource	Households needing	Percentage of sampled households
Missing	11	10.9%
All resources	4	4.0%
Fish	2	2.0%
Salmon	7	6.9%
Coho salmon	9	8.9%
Chinook salmon	24	23.8%
Pink salmon	2	2.0%
Sockeye salmon	22	21.8%
Pacific herring roe	2	2.0%
Eulachon (hooligan, candlefish)	4	4.0%
Lingcod	1	1.0%
Pacific halibut	17	16.8%
Rockfish	2	2.0%
Black rockfish	2	2.0%
Brown rockfish	1	1.0%
Black bear	5	5.0%
Brown bear	1	1.0%
Deer	26	25.7%
Moose	39	38.6%
Unknown large land mammals	1	1.0%
Snowshoe hare	5	5.0%
Marten	1	1.0%
Seal	7	6.9%
Harbor seal	9	8.9%
Sea otter	2	2.0%
Ducks	8	7.9%
Goldeneye	1	1.0%
Mallard	5	5.0%
Teal	1	1.0%
Geese	8	7.9%
Canada/cackling goose	1	1.0%
Crane	1	1.0%
Sandhill crane	1	1.0%
Gull eggs	6	5.9%
Glaucous-winged gull eggs	2	2.0%
Tern eggs	8	7.9%
Marine invertebrates	5	5.0%
Chitons (bidarkis, gumboots)	3	3.0%
Black (small) chitons	1	1.0%
Clams	15	14.9%
Butter clams	2	2.0%
Pacific littleneck clams (steamers)	1	1.0%

-continued-

Table 2-28.—Page 2 of 2.

Resource	Households needing	Percentage of sampled households
Razor clams	1	1.0%
Cockles	13	12.9%
Crabs	9	8.9%
Dungeness crab	6	5.9%
King crab	2	2.0%
Tanner crab	1	1.0%
Octopus	4	4.0%
Sea urchin	2	2.0%
Shrimp	9	8.9%
Unknown marine invertebrates	1	1.0%
Berries	18	17.8%
Blueberry	5	5.0%
Highbush cranberry	1	1.0%
Nagoonberry	2	2.0%
Salmonberry	5	5.0%
Strawberry	16	15.8%
Unknown mushrooms	5	5.0%
Seaweed/kelp	5	5.0%
Black seaweed	11	10.9%
Red seaweed	3	3.0%
Sea ribbons	10	9.9%
Unknown seaweed	1	1.0%
Wood	4	4.0%
Spruce	1	1.0%

*Source* ADF&G Division of Subsistence household surveys, 2016.

Large land mammals is the second most harvested of all subsistence resource categories used by Yakutat households. Thirty-nine percent of responding households explained that they used the same amount of large land mammals in 2015 as they did in previous years, 44% reported that they used less, and 12% said they used more (Table 2-23; Figure 2-40). When asked why they used less, 29% of respondents reported that they did so because they were unsuccessful in their hunt (Table 2-24). Other more frequently stated reasons for using less large land mammals included less sharing and lack of effort. For those households that used more large game in the study year, more sharing, more success, and more need of the resources were the major reasons provided (Table 2-25). In Yakutat, 40% of sampled respondents stated that they did not get enough large game (Figure 2-41). When households that did not get enough large land mammals were asked to evaluate the impact of not getting enough, 5% described it as not noticeable, 45% described the impact as minor, 35% explained that not getting enough large game had a major effect on their household, and 5% stated that the impact was severe (Table 2-26).

Nonsalmon fish is the third most harvested of all subsistence resource categories used by Yakutat households. Fifty-two percent of responding households explained that they used the same amount of salmon in 2015 as they did in previous years, 32% reported that they used less, and 11% said they used more (Table 2-23; Figure 2-40). When asked why they used less, 28% of respondents reported that they did so due to working or no time (Table 2-24). Other stated reasons for using less nonsalmon fish included the resources were less available, there was less sharing, or there was a lack of effort (22% of respondents each). For those households that used more nonsalmon fish in the study year, more sharing, more effort, more need, and more success were all given as reasons why (Table 2-25). In Yakutat, 23% of sampled respondents stated that they did not get enough nonsalmon fish (Figure 2-41). When households that did not get enough nonsalmon fish were asked to evaluate the impact of not getting enough, 4% described it as not noticeable, 65% described the impact as minor and 30% explained that not getting enough nonsalmon fish had a major effect on their household (Table 2-26).

Vegetation is among the most used resource categories. Respondents were asked to make assessments about seaweed separately, so for the remaining vegetation resources about one-half of responding households indicated the same amount was used in 2015 (Table 2-23; Figure 2-40). Approximately 36% of households indicated they used less vegetation in 2015 and 8% used more. When asked why they used less, 27% of respondents reported they did so due to resources being less available, lack of effort, or working/no time (Table 2-24). Other stated reasons for using less vegetation included lack of need, personal reasons, or less sharing. For those households that used more vegetation in the study year, more need, increased availability, more success, and more effort were given as reasons why (Table 2-25). In Yakutat, 32% of sampled respondents stated that they did not get enough vegetation (Figure 2-41). When households that did not get enough were asked to evaluate the impact, 13% described it as not noticeable, 56% described the impact as minor, 13% explained that not getting enough vegetation had a major impact on their household and 16% indicated it was severe (Table 2-26).

Marine invertebrates were used by approximately 70% of Yakutat households; this resource category is among the most used of all subsistence resource categories. Thirty-five percent of responding households explained that they used the same amount of marine invertebrates in 2015 as they did in previous years, 47% reported that they used less, and 6% said they used more (Table 2-23; Figure 2-40). When asked why they used less, 30% of respondents reported that they did so because the resource was less available (Table 2-24). Another frequently stated reason for using less marine invertebrates included working/no time (23% of respondents), followed more distantly by lack of effort (16%). For those households that used more marine invertebrates in the study year, more effort and more success were the only reasons provided (Table 2-25). In Yakutat, 39% of sampled respondents stated that they did not get enough marine invertebrates (Figure 2-41). When households that did not get enough marine invertebrates were asked to evaluate the impact of not getting enough, 13% described it as not noticeable, 49% described the impact as minor, 31% explained that not getting enough marine invertebrates had a major effect on their household, and 5% stated that the impact was severe (Table 2-26).

The remaining 5 resource categories (small land mammals, marine mammals, birds, bird eggs, and seaweed) were used by fewer households in Yakutat, though this does not imply that they are less important to the

households that do use them. For all categories except bird eggs, more households used the same amount of the resources than used less or more (Table 2-23). For all categories, fewer households indicated more use than any other assessment. When asked why they used less, less sharing, lack of effort, and working/no time were shared as the main reasons (Table 2-24). For those households that used more, more effort was the most common reason stated (Table 2-25). More sharing was reported as the major reason for more use of marine mammals, but also reported for seaweed and birds. More success was also a frequently stated reason for more use of small game, birds, and bird eggs. In Yakutat, few sampled households did not get enough of these resources; 6% (small game) to 16% (seaweed) of sampled households reported they did not get enough (Figure 2-41). When households that did not get enough were asked to evaluate the impact of not getting enough, most responding households stated that the impact was minor (Table 2-26).

Assessing household use of all subsistence resources, 41% of responding households explained that they used the same amount of resources overall in 2015 as they did in previous years, 45% reported that they used less, and 13% said they used more (Table 2-24; Figure 2-40). When asked why they used less, 27% of respondents reported that they did so because they were working/had no time and 23% stated it was due to lack of effort (Table 2-25). The next most frequently provided reasons for using less overall resources included unsuccessful harvests and resources were less available. For those households that used more resources in the study year, more success was the major reason provided, followed by more sharing, more need, and more effort (Table 2-26). In Yakutat, 38% of respondents that used all resources and provided an assessment to this question stated that they did not get enough subsistence resources overall (Table 2-27). When households that did not get enough of all resources were asked to evaluate the impact, 3% described it as not noticeable, 29% described the impact as minor, 47% explained that not getting enough subsistence resources had a major effect on their household, and 11% stated that the impact was severe. Many households described the impact of not getting enough specific resources as minor, but as can be seen from Table 2-27, the cumulative impact of not getting enough of these resources was more likely to be major.

Households that did not get enough of any of the 10 resource categories adapted in a variety of ways (Table 2-28). Using more commercial foods was the most common adaptation cited for every resource category except small land mammals and marine mammals; an equal percentage of households explained that they replaced marine mammals with other subsistence foods, which was also the most common adaptation for lack of small game. This is unsurprising because there is no readily available commercial substitute for either of these resources. Apart from using more commercial foods, commonly cited adaptations for all the resource categories were replacing the resources with other subsistence foods or making do without the resources. Households that did not get enough salmon reported the widest variety of adaptations.

Households that reported not having enough of overall subsistence resources were asked which resources they needed. Responses to this question are presented in Table 2-28. Sixty-five unique resources were given, ranging from the specific (black chitons) to the general (fish). Moose and deer were the resources listed most frequently by households, with 39% of sampled households specifying moose and 26% deer. Fish and marine invertebrates were also commonly listed, especially Chinook salmon (24% of households), sockeye salmon (22%), halibut (17%), clams (15%), and cockles (13%). Berries in general (18%), strawberries (16%), and black seaweed (11%) round out the most needed resources. No other resource was identified by more than 10% of households.

## **Harvest Data**

Changes in the harvest of resources by Yakutat residents can also be discerned through comparisons with findings from other study years. Comprehensive subsistence harvest surveys were conducted in Yakutat for the study years 1984 (Mills and Firman 1986), 1987, 2000, and 2015.<sup>7</sup> Each of these surveys used a calendar year as the study period and was conducted in the early months of the following year. A mapping component was included in the 1984, 2000, and 2015 studies but methods varied in each year. All study years

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7. Results for the 1987 and 2000 comprehensive subsistence harvest and use surveys are available online; see the ADF&G Community Subsistence Information System (CSIS): <http://www.adfg.alaska.gov/sb/CSIS/>.

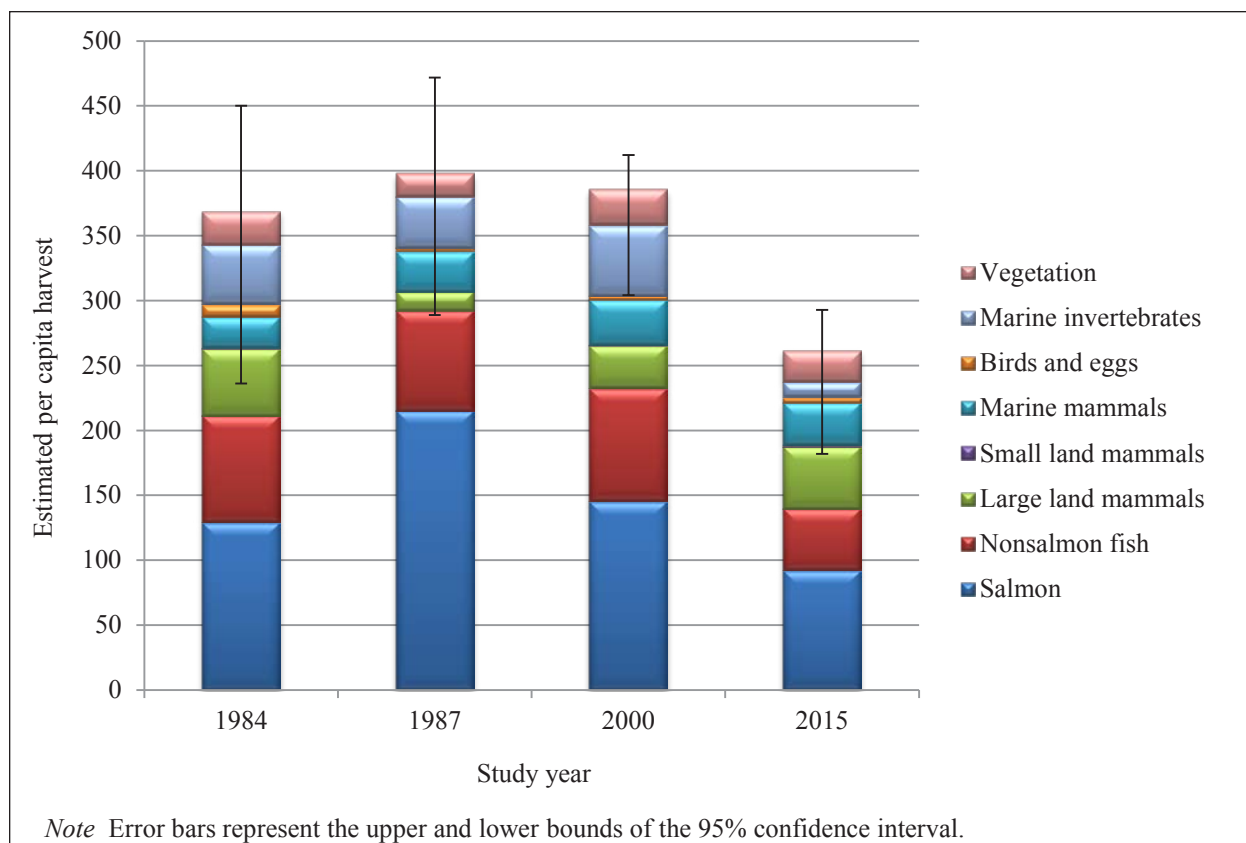


Figure 2-42.—Composition of harvest in pounds per capita, by resource category, Yakutat, 1984, 1987, 2000, and 2015.

employed a random sampling method; in 1987 a stratified random sample was employed, with households being classified as “active harvesters” or “less-active harvesters,” while the other study years took a simple random sample of all Yakutat households, ranging from 28% to 59%. The survey boundary for the general population from which the random samples were drawn was similar in each study year. The 1984 and 1987 studies used the city of Yakutat and the outlying areas, which would have been incorporated into the CDP boundaries used for the 2000 and 2015 studies. In 1984, the study also included the population of people living at Silver Bay logging camp at Sawmill Cove, a few miles northeast of Yakutat, which only operated sporadically for a year.

Overall per capita harvests of wild resources hovered around 375 lb during the first 3 study years before declining to 262 lb in 2015 (Figure 2-42). Comparing the harvests of each resource category over time shows that the decline in overall harvests is not mirrored within each category (Figure 2-43). Land mammals, marine mammals, and vegetation harvests have grown or remained steady over the study years. Harvests of birds and eggs showed a decline between 1984 and 1987 but since have remained stable. Harvests of marine invertebrates, salmon, and nonsalmon fish have shown the greatest declines, with the 2015 harvest estimates being the smallest of all years.

One of the major limitations of the comprehensive household harvest survey is the length of time that often elapses between surveys. In Yakutat, about 15 years separate each of the last 3 surveys, which makes it challenging to infer whether the documented changes in the harvest are evidence of a long-term trend or just an unusual year. For some species, there are additional sources of data that can provide more clues. As documented through the household surveys, overall salmon harvests have declined since the 1987 study (Figure 2-43; Table 2-29). Subsistence salmon permits have been required in Southeast Alaska since

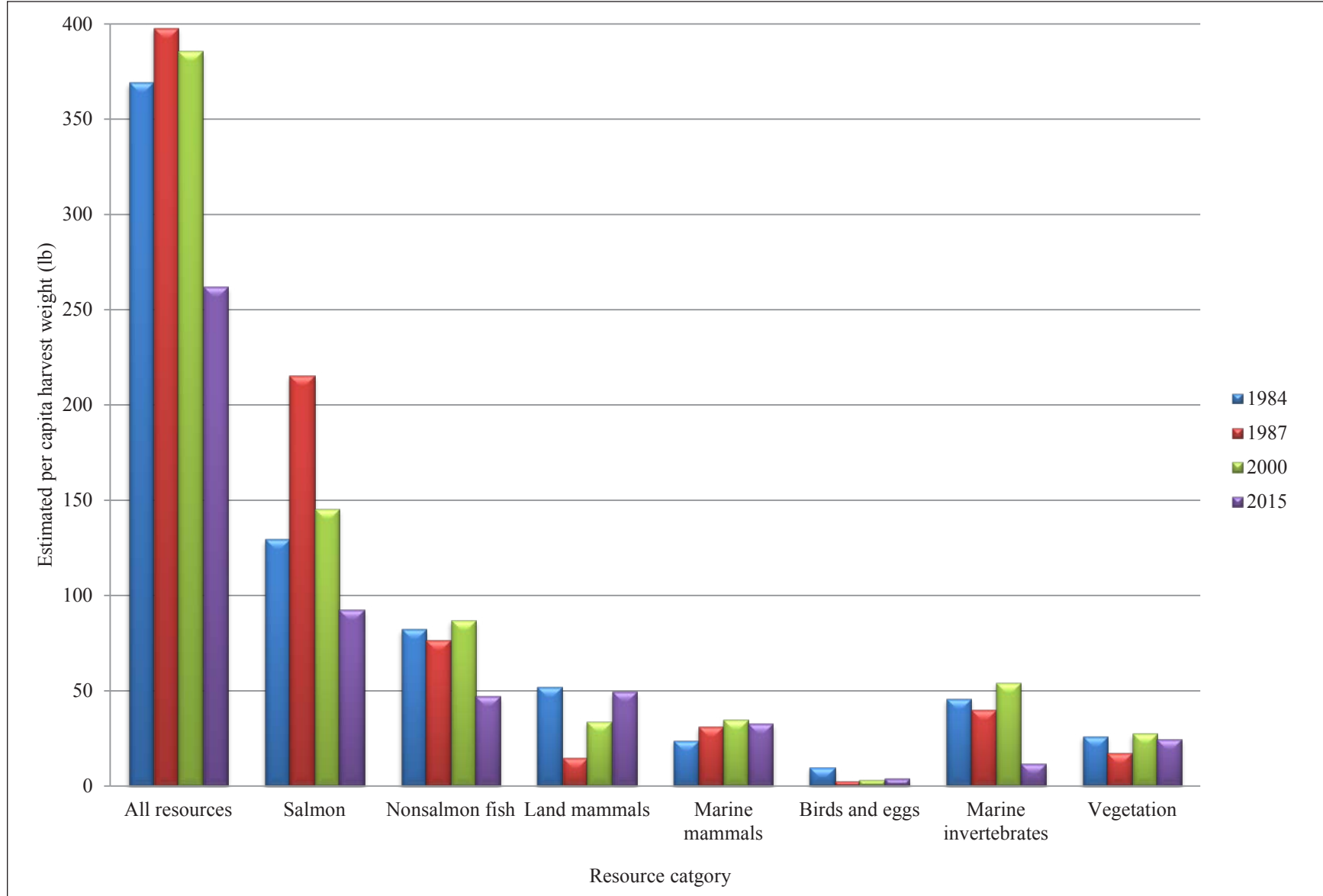


Figure 2-43.—Estimated per capita harvest in pounds usable weight, by resource category, Yakutat, 1984, 1987, 2000, and 2015.

Table 2-29.—Comparison of estimated total and per capita harvests, by resource category, Yakutat, 1984, 1987, 2000, and 2015.

Resource	Estimated harvest in pounds usable weight											
	1984			1987			2000			2015		
	Total	Per capita	CL%	Total	Per capita	CL%	Total	Per capita	CL%	Total	Per capita	CL%
<b>All resources</b>	<b>200,434.0</b>	<b>369.1</b>	<b>29.0%</b>	<b>234,205.0</b>	<b>397.8</b>	<b>23.0%</b>	<b>244,669.0</b>	<b>385.5</b>	<b>14.0%</b>	<b>154,977.3</b>	<b>261.9</b>	<b>21.2%</b>
Salmon	70,295.0	129.5		126,950.0	215.6		92,329.0	145.5		54,794.3	92.6	
Nonsalmon fish	44,671.0	82.3		45,223.0	76.8		55,238.0	87.0		27,789.9	47.0	
Large land mammals	27,729.0	51.1		8,656.0	14.7		21,033.0	33.1		28,400.3	48.0	
Small land mammals	454.0	0.8		0.0	0.0		418.0	0.7		855.7	1.4	
Marine mammals	13,032.0	24.0		18,287.0	31.1		21,991.0	34.7		19,295.0	32.6	
Birds and eggs	5,325.0	9.8		1,464.0	2.5		1,855.0	2.9		2,357.4	4.0	
Marine invertebrates	24,802.0	45.7		23,366.0	39.7		34,447.0	54.3		6,925.9	11.7	
Vegetation	14,125.0	26.0		10,258.0	17.4		17,359.0	27.4		14,552.9	24.6	

*Sources* For 2015, ADF&G Division of Subsistence household surveys, 2016; for previous study years, ADF&G Division of Subsistence Community Subsistence Information System (CSIS), accessed 2017.



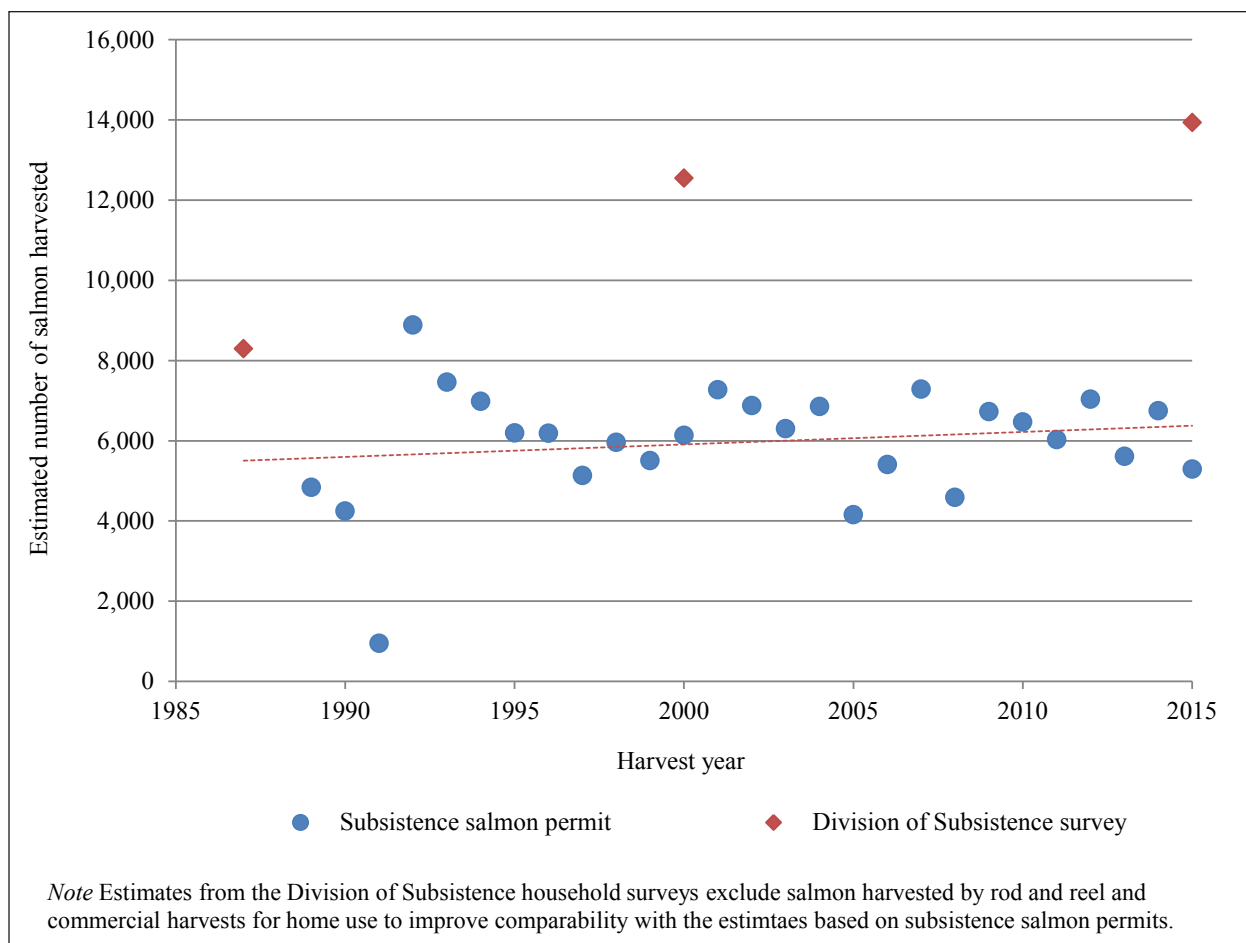


Figure 2-44.—Estimated number of subsistence salmon harvested, Yakutat, 1987–2015.

1989 and collect annual data about the harvests of salmon by subsistence gear. The 2 estimates—from household surveys and permit data—are not directly comparable, but salmon harvest estimates that exclude harvests by rod and reel and commercial harvests for home use (called “homepack”) can be made from the household harvest survey, which can be compared to permit returns. As can be seen in Figure 2-44, a couple of interesting points stand out in such a comparison. One is that the household surveys consistently estimate a higher harvest than estimates based on permit returns. This finding has been noted before in Walker (2009). The reasons for the disparity are not immediately clear and were beyond the scope of this study. Another interesting finding is that while overall salmon harvest estimates declined for each household survey year (Figure 2-43), estimates of harvests that exclude rod and reel and commercial homepack has increased (Figure 2-44). This could reflect changing gear preferences, changes in commercial salmon fishing participation or the use of homepack, or other factors, and is worth pursuing further research. Looking just at salmon harvests estimated from permits, the general trend is slightly increasing, though appears to be more recently declining. Chinook salmon populations have been depressed throughout Southeast Alaska and fishing for them has been curtailed to varying extents in the Yakutat Area since 2012.<sup>8</sup> The 2015 commercial set gillnet harvest was 17% below the recent 10-year average; the commercial harvest of all

8. For example, ADF&G issued emergency orders in 2012–2014 closing the Situk-Ahrnklin Inlet subsistence fishery for Chinook salmon. News releases for emergency orders 1Y00112, 1Y0413, and 1Y0115 can be retrieved on the ADF&G website “Regulation Announcements, News Releases, and Updates: Commercial, Subsistence and Personal Use Fishing”: <http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main>.

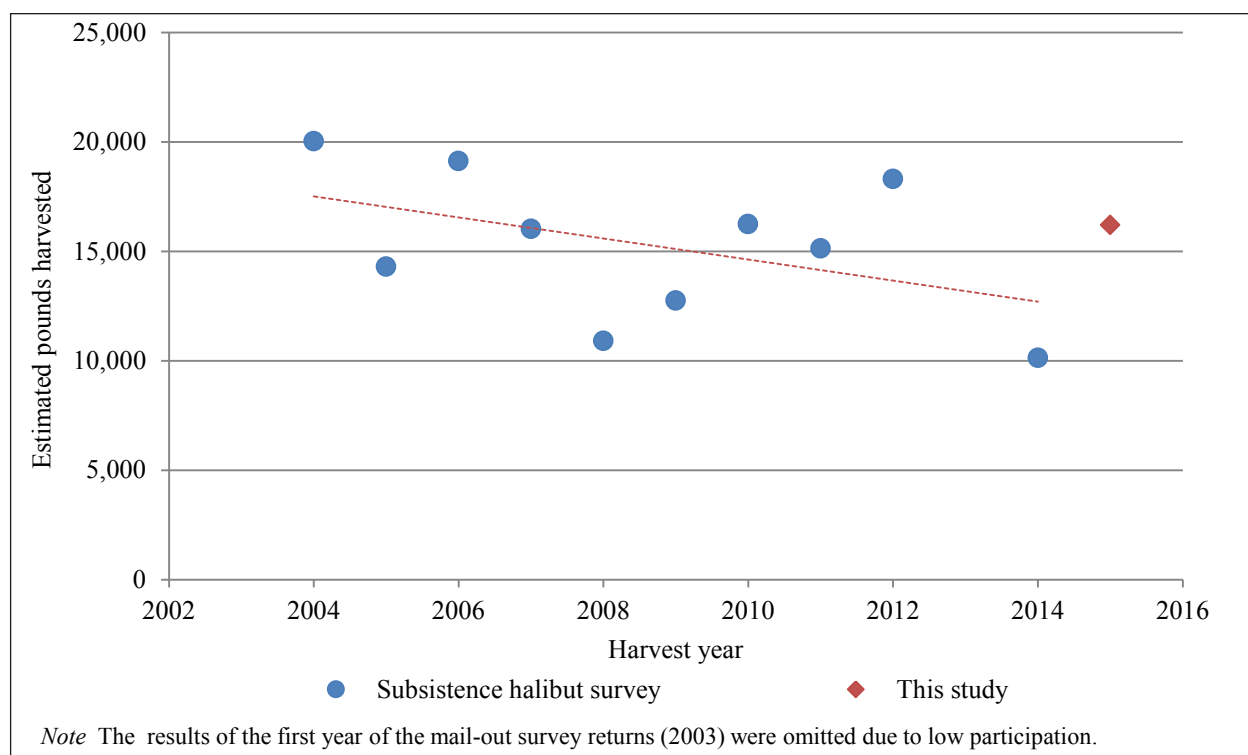


Figure 2-45.—Estimated Pacific halibut harvest in pounds usable weight, Yakutat, 2004–2015.

salmon species in the Yakutat Area was below average except for coho salmon (Zeiser and Woods 2016). In the Situk-Ahrnklin Inlet fisheries, the commercial harvest of sockeye salmon was 39% below the recent average.

Another source of contextual information is available through key respondent interviews. Several key respondents in this study indicated that returning salmon appear to be fewer or smaller in size in recent years. One respondent indicated that he believes heat stress resulting from increased ocean temperatures is the cause of the decline, explaining that at higher temperatures, it costs more energy to take in food than what is gained, causing a reduction in fish size. He said that this is particularly problematic for sockeye salmon because they swim in shallower water where temperatures are higher.

Another key respondent noted concern for decreasing size in both coho and Chinook salmon as well as sockeye salmon. This respondent explained that he is now using a net with mesh that is 3/8-in smaller in size than what he used 10 years ago for these species. The reasons for the decline in the number of salmon are hard to ascertain but the respondent believed expanding beaver populations have been destroying coho salmon habitat. He additionally noted a concern also expressed by others that the weir location on the Situk River causes a miscalculation of escapement because it does not account for the sport fishery harvest that occurs upriver. A third respondent indicated concern for overharvest in the subsistence salmon fishery, noting that even seasonal residents put out personal nets for salmon in the Situk River.

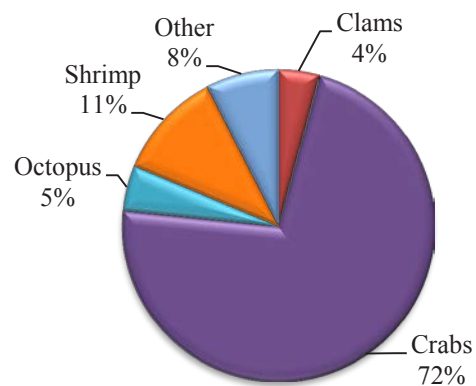
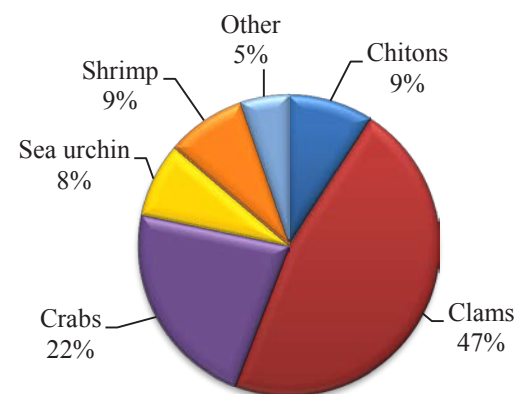
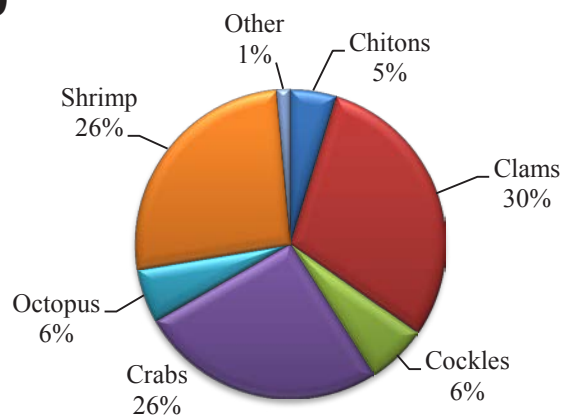
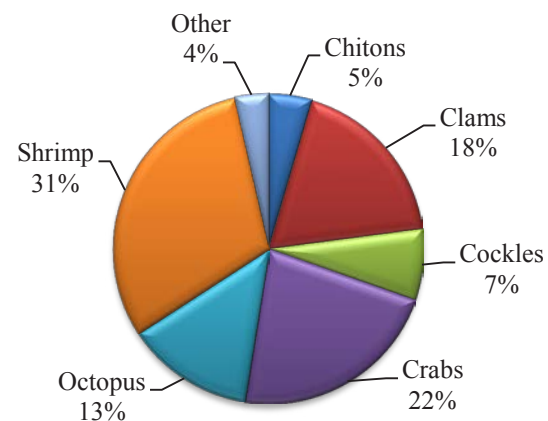
Another resource category demonstrating declining harvests through the household surveys is that of nonsalmon fish. This category is dominated by harvests of halibut (CSIS). The 2015 estimated harvest of halibut was much smaller than the previous survey years, with 24,720 lb harvested in 1987, 39,850 lb harvested in 2000, and only 16,214 lb harvested in 2015 (CSIS; Table 2-11). Beginning in 2003, Yakutat residents could subsistence fish for halibut under federal regulations using efficient gear such as longlines. Since the beginning of that program, an annual (recently semi-annual) mail-out harvest survey has been conducted to estimate subsistence harvests of halibut. In Yakutat, estimated harvests have varied between 10,000 lb and 20,000 lb, but show a generally declining trend (Figure 2-45).

During key respondent interviews and at community meetings, concerns for the halibut resources were repeatedly voiced. The harvest of large halibut was of particular concern throughout the community. One respondent does not think that recent regulatory changes for halibut charters have gone far enough in limiting sport harvests and suggests that nonresidents be required to buy halibut tags similar to those issued for large land mammals. Another respondent concurred that too many halibut are being harvested, especially by the non-local Individual Fishing Quota (IFQ) boats that fish in Yakutat Bay. A third respondent also noted that there are a lot of commercial halibut boats in Yakutat Bay that come in to avoid rougher waters elsewhere and they are directly competing with local subsistence fishers for the same halibut population.

Over the study years, Yakutat residents have harvested many types of marine invertebrates, but 3 categories have composed the majority of the harvests—clams, crabs, and shrimp (Figure 2-46). In 1984, crabs (Dungeness, Tanner, and king) dominated the marine invertebrate harvest and then declined drastically for the next 3 study years. This coincides generally with decreasing Dungeness crab populations; commercial harvests increased in the 1980s with rising demand for the product, before gradually declining through the 1990s until the fishery was closed in 2000 (Stratman et al. 2014). Clam harvests increased exponentially between the 1984 and 1987 study year, their proportion in the overall harvest remained about the same in 2000, and then decreased back toward the 1984 level in 2015. There is no commercial fishery for clams and populations are generally not monitored. The proportion of shrimp harvests has increased each study year to account for nearly one-third of the overall harvest of marine invertebrates in 2015.

Several key respondents expressed their concerns about increasing populations of sea otters and the effect that they have on local shellfish populations. Other respondents indicated that shellfish populations have been so depleted that some people have stopped attempting to harvest them altogether. Interestingly, one respondent noted that fears of paralytic shellfish poisoning (PSP) are not as common in Yakutat because of residents' perception that the community's position on the open ocean provides enough water and turbulence to prevent PSP from spreading.

Changes in the overall use of wild resource and harvest patterns over time were reported by many key respondents and survey respondents in this study. The perceived causes of these changes were both sociological and ecological in nature. The intentional introduction of terrestrial species (i.e., Sitka black-tail deer) and the natural range expansion of others (i.e., moose) have provided additional subsistence opportunities while a decline in other species (e.g., shellfish, halibut, goats) has decreased subsistence opportunities. Daily jet service and a rise in non-local sport fishing and hunting are considered by many residents to be exacerbating competition for limited resources. It is recognized by many in the community, however, that tourism plays an important role in the local economy. For this reason some residents are advocating for a shift from consumptive tourism to non-consumptive ecotourism in the region.

**1984****1987****2000****2015**

Note The "other" category represents all resources that contributed less than 4% each to the marine invertebrate harvest.

Figure 2-46.—Comparison of marine invertebrate harvest composition, Yakutat, 1984, 1987, 2000, and 2015.

## Current and Historical Harvest Areas

The comprehensive harvest survey in 1984 employed a mapping method of recording lifetime use areas of key respondents and randomly sampled survey respondents (Mills and Firman 1986) (Figure 2-47). For the 1987 study, no search and harvest area data were collected during survey administration. Instead, the Mills and Firman (1986) maps were reviewed at a community meeting and residents were asked to comment on the accuracy of the mapped harvest areas and to provide information on specific harvest patterns, factors influencing those patterns, and changes in use areas over time. The comments received at that meeting verified and qualified the mapped data (unpublished Alaska Department of Fish and Game Division of Subsistence manuscript). During the 2000 study, respondents were asked to map the areas they had used over the last 5 years (Figure 2-48) (unpublished Alaska Department of Fish and Game Division of Subsistence data). Because the 1984 and 2000 survey maps show use areas for a lifetime or a 5-year time period, they cannot be directly compared to the mapped data from 2015, which only show one year's search and harvest areas (Figure 2-49). It would be expected that more areas were used over the course of a respondent's lifetime or the previous 5 years than just 1 year because harvesters go where the chance of success is highest. As populations of animals move or fluctuate in abundance, hunters and fishers respond through changing their harvesting locations. During key respondent interviews and random surveys, however, people commented on the changes in subsistence harvesting areas due to changing involvement in commercial fisheries. Streams in the Yakutat area have different run timings and different species, so commercial fishers used to have a harvesting round that included the Tsiu, Italio, Situk, and Alsek rivers. This also spread out the subsistence harvest of fish and other resources over a large area. Commercial participation in the Tsiu River coho salmon fisheries has decreased, as it has in the Alsek and other rivers. Now most of the commercial and subsistence fishing focus is on the Situk River.

Some key respondents noted that in the mid- to late 20th century, many families would spend the warmer months at Dry Bay where a commercial salmon cannery was previously located. They noted that it was common for Yakutat residents to travel to and from Dry Bay onboard marine vessels servicing this cannery and associated commercial fishery. When the cannery closed, it quickly became too expensive and difficult for many people to get to the Dry Bay area. For many families that frequented Dry Bay in the summer, subsistence harvests that took place in that area shifted to the vicinity of Yakutat. In addition, isostatic rebound and a related decline in the East Alsek River fishery also caused a shift in fishery participation from that area to elsewhere.

Shifts in the distribution and populations of terrestrial species have also caused a shift in harvest areas. Respondents indicated that a decline in goats in the Brabazon Range caused some hunters to utilize the area of Icy Bay more frequently. Moose population fluctuations have also caused changes to spatial harvest patterns over time. In the early 20th century this species only occurred locally in the vicinity of Dry Bay, but they gradually made their way northward. One respondent noted that flooding in Russell Fiord destroyed much of the nearby moose forage and that this once popular hunting area has not been as productive since. One respondent noted that moose, small game, and upland game bird hunting increased to the east of the Dangerous River when the road and bridge were constructed over that river in the 1970s. Additionally, another respondent noted that a heavy military presence in the area during World War II resulted in a decline of many species due to overharvest and that residents would sometimes need to travel further to harvest in light of the increased competition at that time.

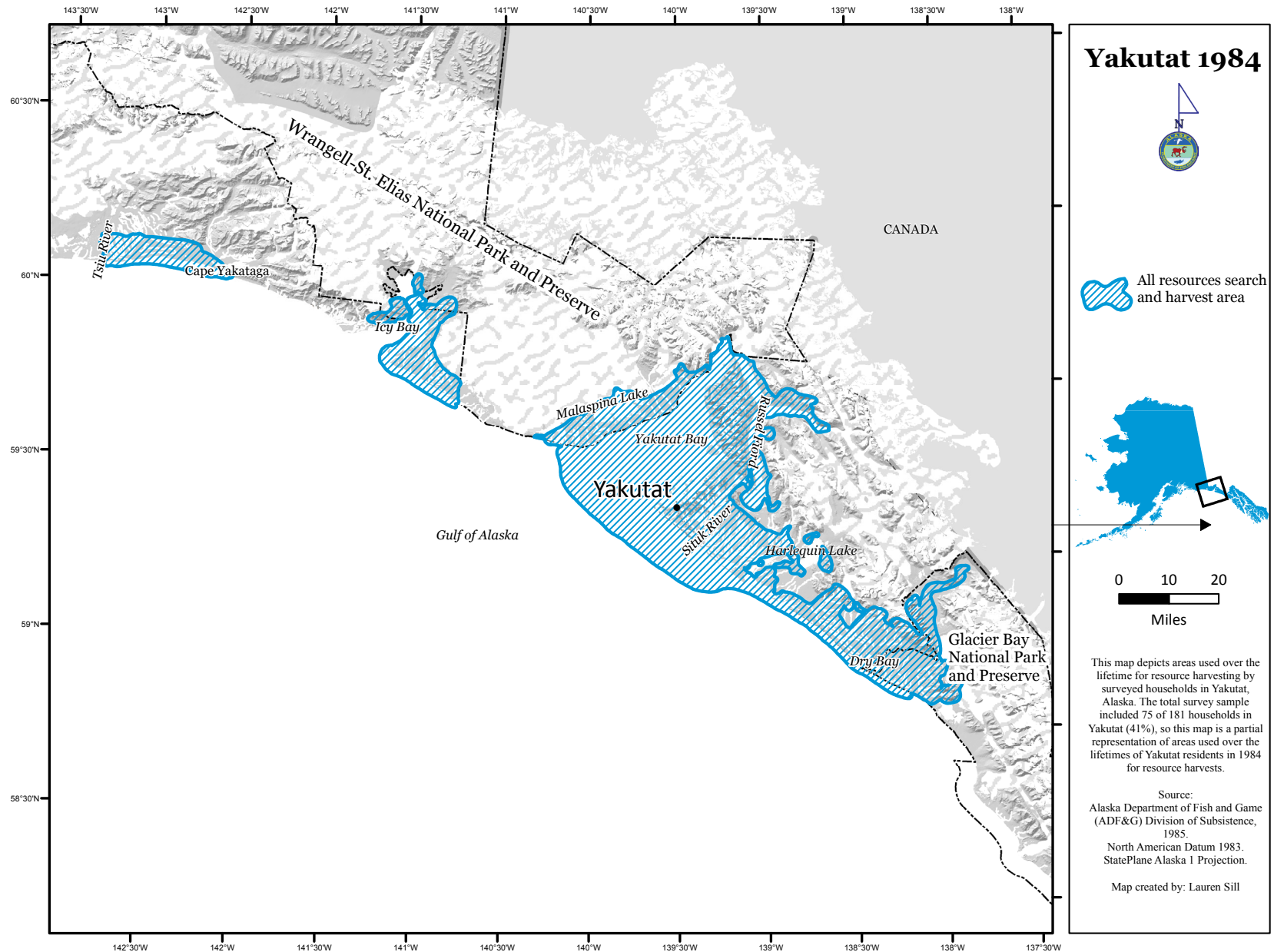


Figure 2-47.—Wild resources search and harvest areas, Yakutat, 1984.



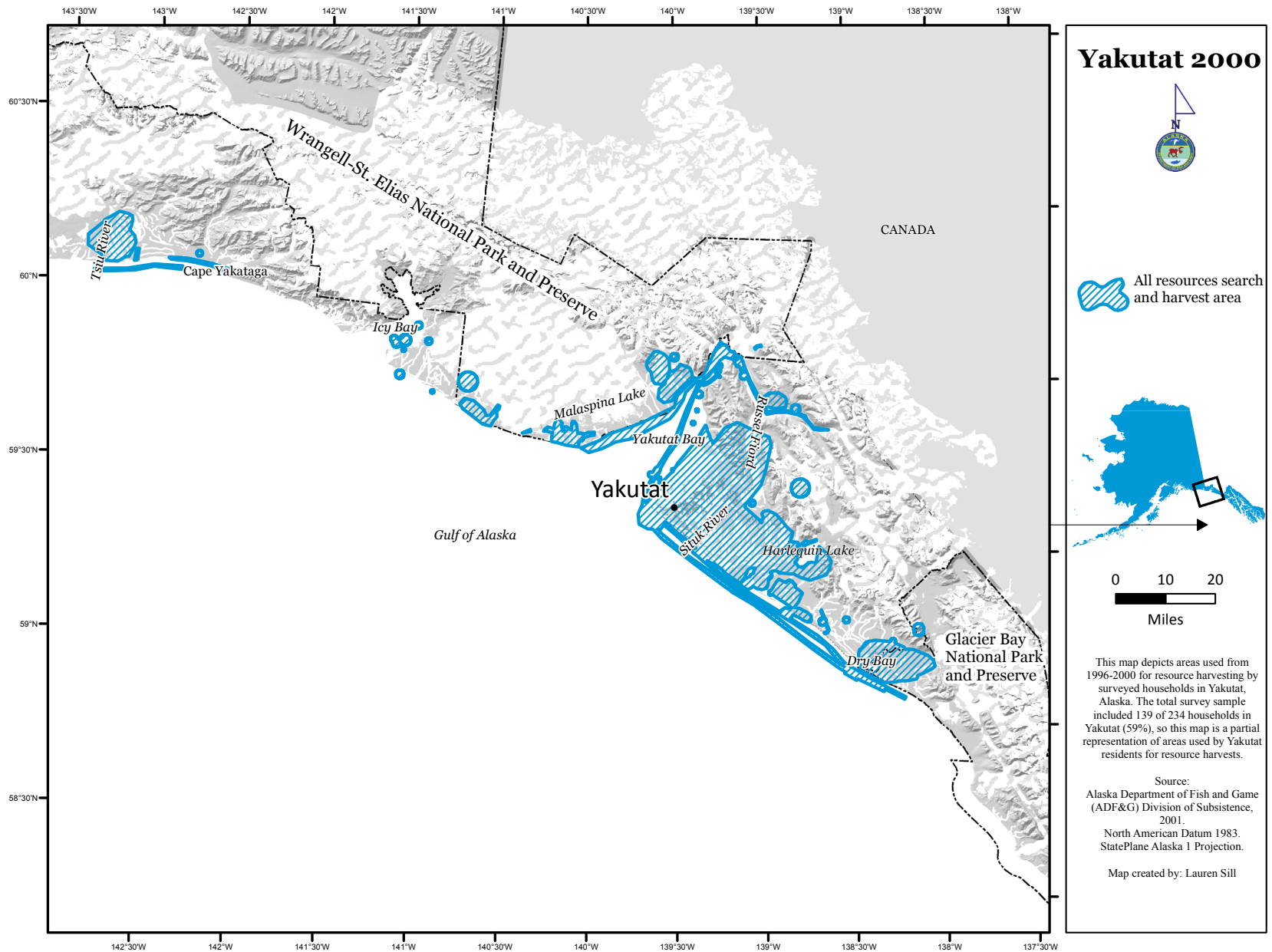


Figure 2-48.—Wild resources search and harvest areas, Yakutat, 2000.



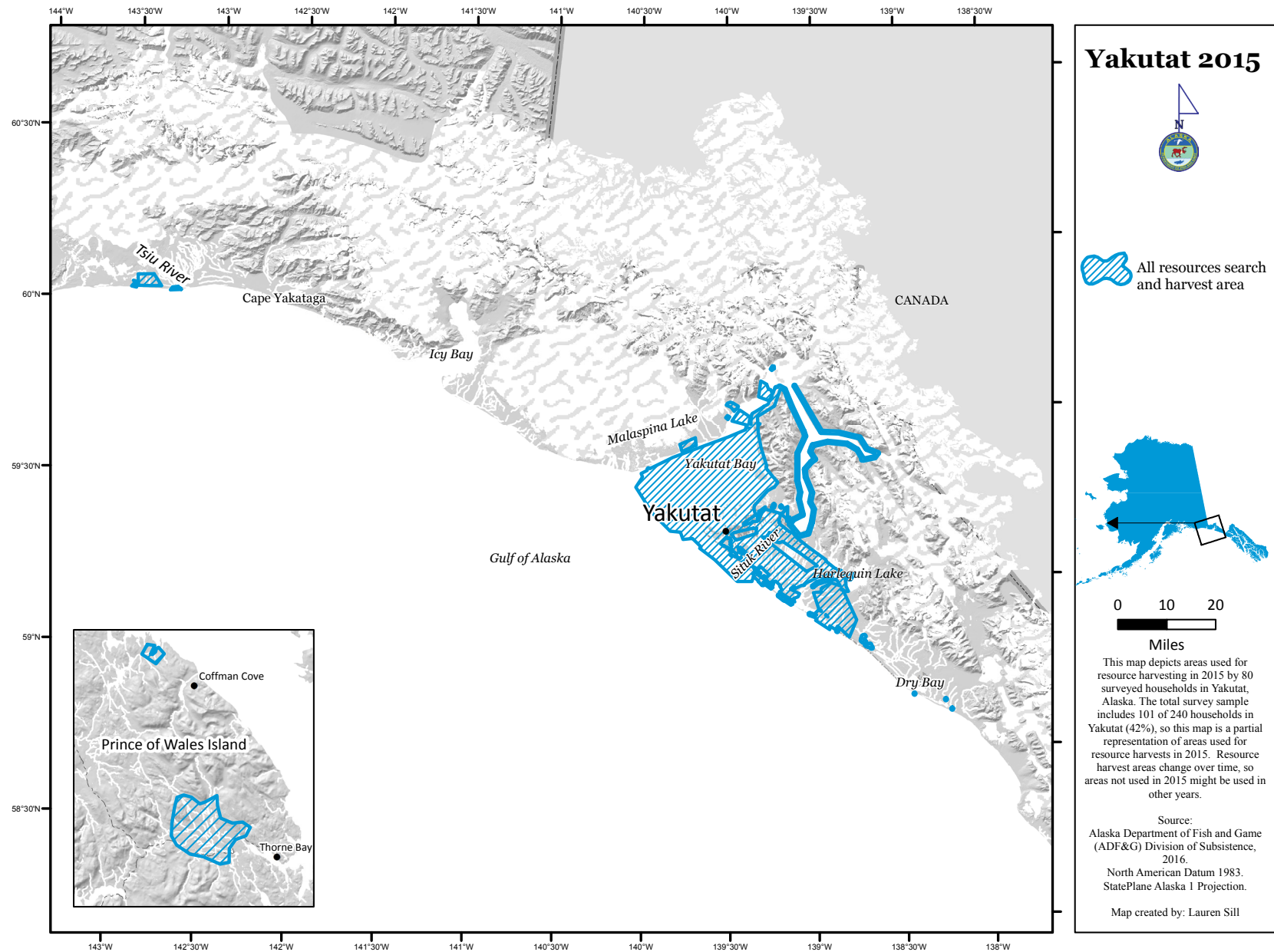


Figure 2-49.—Wild resources search and harvest areas, Yakutat, 2015.

## LOCAL COMMENTS AND CONCERNS

Following is a broad summary of local observations of wild resource populations and natural environment and economic trends that were recorded during the surveys. The surveyed topics were identified through key respondent interviews and scoping meetings conducted during the early stages of the project. Statements regarding these topics were presented to the respondents who were asked to respond with “agree” or “disagree.” A small percentage of respondents either refused to respond to these statements or indicated that they did not know how to answer, usually because of a lack of familiarity with the topic. In reporting the responses in Table 2-30, response refusals or responses of “do not know” account for the remaining percentage of responses when described totals do not sum to 100%. When responding to the observation statements, many respondents shared comments reflecting local and traditional knowledge that was relevant to the topic, which are summarized throughout this section. Additionally, this section integrates comments and concerns voiced during survey administration, key respondent interviews, and various project meetings held in Yakutat, including the community review meeting of preliminary data.

As mentioned in the previous chapter, a cultural consensus analysis (CCA) approach was used in this study; CCA is a tool used to identify shared beliefs and behaviors within or among groups, which help to identify harvest changes due to social-ecological trends in the community and resilience and adaptive capacity to those trends. This section summarizes the community-level consensus responses to the observation statements developed using the CCA tool to broadly illustrate issues and concerns for Yakutat residents. A forthcoming journal article will provide cultural consensus analysis of the responses.

As can be seen in Table 2-30, respondents agreed more on some questions than others. For example, almost every respondent agreed that commercial salmon fishing is an important aspect of Yakutat’s economy and that it was a good idea to introduce deer to the Yakutat area. There was also strong agreement that Yakutat is a resilient community that can weather environmental change (there was much less agreement [22% fewer responses] about whether the community could weather economic change) and that non-local sport fishing anglers frequently abuse harvest limits in Yakutat area rivers. On other statements, there was much less agreement among respondents, such as to whether they would like to see a salmon hatchery near Yakutat, or that the local beluga whale population in Disenchantment Bay is culturally important to the community (fewer than 50% of respondents supported those statements). Some statements garnered many more “I do not know” responses than others; these included statements like steelhead trout are harming local salmon populations, cruise ships are causing harm to local harbor seal populations, and respondents would like to see more local participation in trapping.

Table 2-30.—Reported subsistence observations summary, Yakutat, 2015.

Observation statement	Agree		Disagree		Do not know		Missing	
	No.	Pct.	No.	Pct.	3.0	Pct.	No.	Pct.
I am concerned about the possibility of Russell Fjord flooding the Situk River.	42	41.6%	54	53.5%	4	4.0%	1	1.0%
I have noticed local forests advancing into new areas near Yakutat.	53	52.5%	37	36.6%	9	8.9%	2	2.0%
I have noticed a decline in local frog populations throughout my lifetime.	78	77.2%	13	12.9%	9	8.9%	1	1.0%
Climate change is causing alarming changes to the landscapes near Yakutat.	52	51.5%	41	40.6%	7	6.9%	1	1.0%
Yakutat is a resilient community that can weather environmental change.	79	78.2%	11	10.9%	10	9.9%	1	1.0%
Yakutat is a resilient community that can weather economic change.	57	56.4%	33	32.7%	10	9.9%	1	1.0%
I am concerned about the growth of tourism in Yakutat.	28	27.7%	67	66.3%	5	5.0%	1	1.0%
Charter fishing is important to the economy of Yakutat.	81	80.2%	15	14.9%	4	4.0%	1	1.0%
Guided hunting is important to the economy of Yakutat.	55	54.5%	39	38.6%	6	5.9%	1	1.0%
Non-local sport fishing anglers frequently abuse harvest limits in Yakutat area rivers.	80	79.2%	12	11.9%	9	8.9%	0	0.0%
Cruise ships are causing harm to local harbor seal populations.	22	21.8%	53	52.5%	23	22.8%	3	3.0%
Commercial salmon fishing is an important aspect of Yakutat's economy.	99	98.0%	1	1.0%	1	1.0%	0	0.0%
My household would find a way to subsist if salmon failed to return to Yakutat.	81	80.2%	18	17.8%	1	1.0%	1	1.0%
Ophir Creek is a good option for harvesting sockeye salmon locally.	11	10.9%	78	77.2%	11	10.9%	1	1.0%
I have noticed salmon becoming smaller in size.	57	56.4%	33	32.7%	10	9.9%	1	1.0%
Current subsistence salmon fishing openers are sufficient to meet local needs.	74	73.3%	22	21.8%	4	4.0%	1	1.0%
I would like to see a salmon hatchery near Yakutat.	49	48.5%	38	37.6%	13	12.9%	1	1.0%
Steelhead trout are harming local salmon populations.	38	37.6%	38	37.6%	24	23.8%	1	1.0%
My household can get enough hooligan most years.	64	63.4%	22	21.8%	14	13.9%	1	1.0%
Too many large halibut are being harvested from Yakutat waters.	50	49.5%	26	25.7%	24	23.8%	1	1.0%
I would support a commercial fishery for spiny dogfish.	71	70.3%	16	15.8%	13	12.9%	1	1.0%
Sea otters are affecting my ability to harvest enough shellfish.	64	63.4%	23	22.8%	13	12.9%	1	1.0%
Commercial crabbing opportunities should be expanded near Yakutat.	24	23.8%	68	67.3%	8	7.9%	1	1.0%
The local beluga whale population is culturally important to the community of Yakutat.	37	36.6%	44	43.6%	17	16.8%	3	3.0%
My household relies on moose more than any other wild resource.	39	38.6%	60	59.4%	1	1.0%	1	1.0%
Moose harvest permits should be reduced to 1 animal per household annually.	56	55.4%	34	33.7%	9	8.9%	2	2.0%
It was a good idea to introduce deer to the Yakutat area.	96	95.0%	1	1.0%	1	1.0%	3	3.0%
Too many bears are being killed in defense of life and property.	28	27.7%	62	61.4%	8	7.9%	3	3.0%
It is wrong to hunt brown bears because of cultural beliefs.	15	14.9%	70	69.3%	12	11.9%	4	4.0%
Wolves have a negative impact on local moose and deer populations.	34	33.7%	50	49.5%	16	15.8%	1	1.0%
We welcome the expansion of local beaver populations.	29	28.7%	54	53.5%	17	16.8%	1	1.0%
I would like to see more local participation in trapping.	35	34.7%	44	43.6%	21	20.8%	1	1.0%
My household has the knowledge to harvest bird eggs if we want to.	67	66.3%	31	30.7%	1	1.0%	2	2.0%

Source ADF&G Division of Subsistence household surveys, 2016.

Note No survey respondents refused to provide a response.

## Environmental Change

Several local concerns regarding climate and environmental change near Yakutat were identified in this study. One of these relates to a threat posed by Russell Fiord to the east of the community. The fjord is proximal to the Hubbard Glacier, one of a few contemporarily advancing glaciers in Alaska. Advancement of the glacier in the past has led to the blocking of a narrow body of water that connects Russell Fiord to Disenchantment Bay. When blocked, the fjord's water volume increases. Such an event occurred in 1986 and 2002; but, in both instances, the water from the fjord accumulated enough pressure to burst through the ice blocking the opening to Disenchantment Bay, subsequently draining the fjord to a normal water level. A fear held among some local residents is that in a future blocking event, water pressure near the glacier may not be enough to remove the blockage and the fjord will eventually flood to the south through the Situk River. Some respondents indicated that, during previous blockage events, the adjacent Nunatak Fiord was largely frozen and that more recent melting in this area creates a larger volume of water and differing flow dynamics. Respondents suggested that these conditions may affect hydrological responses to future blockages.

Survey respondents were asked if they are concerned about the possibility of Russell Fiord flooding the Situk River. A majority of respondents (54%) indicated that they were not concerned while 42% indicated that they are concerned. Several respondents emphasized the word "concern" within the question and clarified that while they feel that this event will likely occur and may have negative consequences, they do not regularly "worry" about the possibility. Comments on the degree of effect that such an event would have on the community ranged from "it would be the end of Yakutat" to it would "provide more fish habitat" and produce a "great spawning opportunity." A key respondent indicated that elders used to talk about the "glacier that broke" and would warn that it could happen again. She remembers elders saying that there is nothing that can be done and that residents just need to accept that it will happen. She also remembered hearing that the U.S. Army Corps of Engineers (COE) considered an option to use explosives to keep the salt-water channel open; however, the COE rejected this action (Biberdorg 2007).

Another key respondent noted that Russell Fiord is a very productive harvest area and is an excellent place to seek crabs. He indicated, however, that access to the fjord is somewhat dangerous and expensive, and that he wishes there was easier road access for launching a boat. Currently there is a three-quarter-mile foot trail from the Yakutat side of the fjord but, to get a boat into the fjord, one must travel through Disenchantment Bay and through a narrow chute separating the land from Hubbard Glacier. He described the area and the dangerous conditions to pass through the chute:

If you're in a bigger boat it is [nerve-wracking]. If you're in a smaller boat it's no big deal because you're so fast you can outrun the waves. But a bigger boat where you're going 7 knots, 8 knots, you ain't outrunning no big wave. You're chewing your nails. My grandpa's boat, the boat that's sitting up there on the beach, well he was coming through there and got a little bit of a late start on an outgoing. They've got these big whirlpools and they suck icebergs and everything. Well my grandpa just happened to be cruising through and a whirlpool sucked down an iceberg and he went on down. It drug it down and when the iceberg came back up it just happened to come back up and hit the back corner of his boat. It took the back corner of it off. He had to run it up on the beach, this big power troller.

When the glacier has advanced in the past, Russell Fiord began to fill with water. A key respondent explained that when the fjord began to flood in 2002, the saltwater killed much of the surrounding vegetation that provided moose habitat. The Nunatak Bench moose hunt was eliminated in 2002 when the local moose population plummeted (Harper and McCarthy 2014). He explained that even the big trees were killed but now that those are not providing shade, the primary growth is coming back in those areas, including willows.

Some key respondents in this study indicated that they have observed local changes in vegetation, including the advancement of forests in several areas. Survey respondents were then asked if they, too, had noticed

local forests advancing into new areas near Yakutat. Approximately 53% of respondents indicated that they had noticed this while 37% indicated that they had not. The question was sometimes confusing to respondents because it did not clearly define the parameters of “near Yakutat” or the type of forest. For instance, several respondents stated that they had seen an advancement of early successional forests, especially of willow and alder, but not of old growth forests.

Many specific observations were offered when responding to the statement about observing advancing forests. Woody vegetation expansion in proximity to the airport and in previously logged areas was mentioned by several respondents. Others offered observations of brush expansion along older trails as well as into and near streams and creeks, sometimes because streambeds were no longer cleared. Several mentioned early successional growth expansion in the Moose Meadows area and the perception that this is making it harder to see moose. Additionally, 2 respondents indicated that willows and alders are taking over areas that were previously known to be productive for berries.

Others stated that they have seen rapid woody vegetation expansion in the Dry Bay area to the south of Yakutat. A key respondent explained that in a 6–7 year period, the forests in Dry Bay had expanded 2 miles toward the sea. He remembered seeing 14-in saplings and returning to find 40-ft trees. This respondent has also seen a similar situation occurring on the Tsiu River. He had previously lived in a cabin there, but after returning several years later, he could not find the cabin because there was woody vegetation “for 10 miles in any direction.”

This respondent also observed vegetation changes in the Tawah (Tower) Creek drainage near Yakutat. He explained that there were no lily pads when he arrived in Yakutat in 1975, but from 1977–1979, they began showing up in the Tawah system. He said that today, by June, you cannot see the bottom of the creek through the lily pads and that they are as far as you can see in any direction.

Another respondent indicated that the area where the airport is currently located used to be a swamp and that this could be seen when looking at old World War II photographs. He said that staff from the airport had dug drainage ditches, took the gravel out of the ditches, piled it up and “called it a runway.” It is now a thick forest in that area.

Amphibians can also serve as indicators of environmental change. Several key respondents stated that they have observed extreme fluctuations in local frog populations over time, but the magnitude of these perceived changes appears to be proportional to the respondents’ age and duration of residency; older respondents indicated that frogs were once much more abundant locally while some younger respondents indicated that they perceive frog abundance becoming greater over time. Closer analysis of responses is needed to confirm a trend in observations based on the age of respondents. Some respondents suggested that a severe decline in Yakutat area frog populations several decades ago was the result of the introduction of northern pike into the local pond system. These fish have since been eradicated but many respondents suggested that frog populations have not fully recovered from this predator introduction.

Survey respondents were asked specifically if they noticed a decline in local frog populations throughout their lifetime. Approximately 77% indicated that they had while 13% indicated that they had not. An extensive array of comments was provided that largely related to the magnitude of the decline. Common comments included “they used to be everywhere,” “they were plentiful,” and, “I haven’t seen a frog for years.” Several respondents indicated that frogs “disappeared” in the late 70s and early 80s. Among those who indicated that they have not noticed a decline or that they “do not know,” many qualified their answer by indicating that they have never seen a frog locally and thus are unable to comment on population fluctuations over time.

Other questions regarding specific environmental changes were asked of respondents and are reported here under each species category. More generally, however, residents were also asked if climate change is causing alarming changes to the landscapes near Yakutat; 52% agreed with the statement and 41% disagreed. Among those who agreed with the statement, several mentioned observations of erosion and landslides. Others mentioned earlier ripening of berries, shorter winters resulting in greater vegetation growth, and increased flooding. Among those who disagreed with the statement, several took issue with



the word “alarming.” They suggested that while changes are occurring, they do not see them as alarming. Several others indicated that they have not noticed such changes on local landscapes.

Respondents were asked if they think Yakutat is a resilient community that can weather environmental change. Approximately 78% of respondents agreed with this statement while only 11% disagreed. Among those who agreed, comments included “hope” that the community is resilient enough to weather environmental change and some indicating that this capacity depends on the magnitude and nature of the change. One respondent indicated that the community will only survive as long as it has access to wild foods. Similarly, some who disagreed with the statement indicated that the community’s survival depends on the availability of fish. Others in disagreement commented that they do not believe the city is prepared for environmental change and that thus far it has failed to adjust to current conditions.

## **Economic Change**

A similar question was asked regarding the community’s resilience in being able to weather economic change. Only 56% of respondents indicated that they agreed with this statement while 33% disagreed. Among the 10% who responded that they “do not know,” most of the comments suggested a lack of confidence in the community’s ability to weather economic change. Even among those respondents who agreed with the statement, many comments suggested doubt or indicated that economic conditions are so dire currently that they can only improve in the future. Comments regarding the reasons for current economic conditions included emigration, a lack of job opportunities, high cost of living, limited resource development, and a lack of innovation.

Survey respondents were asked if they are concerned about the growth of tourism in Yakutat. Only 28% of respondents indicated that they are concerned with tourism growth and 66% indicated that they were not. This was an awkward question for a multitude of respondents; many indicated that they are concerned about the “lack” of growth in tourism. Many respondents suggested that greater growth of tourism is needed but several qualified this as a need for “non-consumptive tourism” or “ecotourism.” While respondents generally suggested that tourism is necessary for the local economy, some respondents who indicated concern for tourism’s growth related that concern to tourism’s effect on local resources.

Guided hunting and charter fishing are 2 predominant types of tourism in Yakutat. Survey respondents were asked specifically if each of these is important to Yakutat’s economy. For charter fishing, 80% indicated that it is important while 15% indicated that it was not. Some respondents commented that while it is important to the economy of the community, there are not enough local people engaged in it and that much of the money leaves the community. Compared to the importance of charter fishing, a smaller percentage of respondents (55%) indicated that guided hunting was important to the economy while a greater percentage (39%) indicated that it was not. Comments were similar in indicating that most of the economic benefit lies with non-local operators.

Despite the perceived importance of charter fishing, a seemingly widely held perception of non-local sport fishing anglers (both chartered and independent) was that they often abuse harvest limits. Survey respondents were asked if non-local sport fishing anglers frequently abuse harvest limits in Yakutat area waters. Approximately 79% of respondents indicated that they do, 12% responded that they do not, and 9% responded that they were not sure. Additional comments suggest that respondents perceive overharvest by these users is frequent, and some point to a lack of enforcement as a driving factor. Even among those respondents who disagreed, additional comments suggested that while many do not perceive the action as “frequent” they do acknowledge its occurrence.

Another component of the local tourism industry is cruise ships. These ships originate outside of Yakutat, and, until recently, they would pick up Yakutat Tlingit Tribal members temporarily to give educational talks on board the vessel. Despite a decline in passenger visitation to the community, ships continue to sail into nearby waters, particularly Disenchantment Bay and Dry Bay. Some key respondents indicated concern that, because these areas provide important harbor seal breeding habitat, cruise ships are perceived to be negatively affecting the seal populations. According to these respondents, the cruise ships contaminate the water and cause surface disturbance that throws newborn seals off of floating ice before they are able to

swim, thus drowning the pups. A local law enforcement officer indicated that he observed this happening while aboard one such vessel, and said that the vessel itself killed several seals by sailing directly over top of them. However, this was a contentious issue with other respondents, who believed that cruise ships are not affecting the harbor seal population.

Knowledge of this situation or its perceived harm to the seal population does not seem to be shared among the community at large. Only about 22% of respondents indicated that this was true while 53% indicated that it was not true and 23% indicated that they did not know. Among those offering additional comments on the subject, several mentioned a need for monitoring cruise ship activities and setting additional boundaries, particularly near seal pupping grounds in the vicinity of Hubbard Glacier. One respondent noted that a greater stressor on the seal population is an increase in the sea lion population.

Commercial fishing was widely seen to be an integral part of the community of Yakutat. The loss of the East Alsek River for commercial fishing was a substantial detriment to the community. Commercial fishing for halibut has become challenging because, as commonly understood among commercial fishers in the area, the quota keeps going down and it is not possible to make a living with longline IFQs for halibut anymore. Prices paid for salmon have also been going down since the late 1970s, according to statements from residents.

Many Yakutat residents also participate in or have participated in commercial salmon fishing. Respondents were asked if commercial fishing is an important aspect of Yakutat's economy. An overwhelming majority of respondents (98%) indicated that this was true while only 1% indicated that it was not. Few additional comments were provided in response to this question. One respondent noted that commercial fishing is the "only" part of the economy besides government.

## **Fish**

More comments were offered about fish than any other resource category. Comments ranged from the broad to the specific and concerned the commercial, subsistence, and sport fisheries in Yakutat. Some residents felt that the sport fish harvest was higher than was being accounted for. Sport fishing participation appears to have grown since the 1980s and there is concern that some people are selling their sport-caught catch and circumventing harvest limits. Several residents suggested some sort of punch card to help ensure that sport fishing anglers stay within their harvest limits.

Some respondents wanted to see new fisheries developed, including for spiny dogfish, skates, and herring sac roe. The study year 2015 was a challenging year with fewer fish available than usual. Fish were noted as running later than usual. Some residents had concerns about the effects of the Fukushima nuclear plant meltdown and physical deformations of fish they had observed.

## ***Salmon***

Many key respondents and survey respondents in this study explained the importance of locally available salmon both to meeting subsistence needs and to providing economic opportunity. Several questions were asked of survey respondents to better understand perceptions of this resource, especially as it relates to the management, use, and importance of salmon over time.

To better understand perceptions of Yakutat's ability to cope with environmental change, survey respondents were asked if they think their household would find a way to subsist if salmon hypothetically failed to return to Yakutat. Approximately 80% agreed that they would while 18% indicated that they would not. Among those respondents who provided additional comments, many suggested that while they would survive, conditions would be very difficult. One respondent indicated that their family would move and another suggested that no one would live in Yakutat if this occurred.

Several key respondents told of the historical importance of Ophir Creek for providing subsistence salmon fishing opportunities. They indicated that this was traditionally a popular sockeye salmon creek but that the resource has declined dramatically in this system. Survey respondents were asked if Ophir Creek is a good option for harvesting sockeye salmon locally. Only 11% of respondents agreed with this statement while 77% disagreed. Many respondents indicated that this used to be true and some offered perceived reasons



for the decline, including the discontinuation of annual debris clearing, isostatic rebound, contamination, and increased beaver activity.

There was some indication among key respondents that salmon seemed to be becoming smaller in size over time. Survey respondents were therefore asked if they noticed salmon becoming smaller. Approximately 56% of respondents said that they did notice this and 33% said that they did not. Among those who indicated that they have noticed a decrease in salmon size, several commented that this was primarily observed in just the past couple of years, and that it was especially pronounced in 2015. Many comments suggested that this was noticed for sockeye salmon, and some respondents included coho salmon for this observation. Among those respondents indicating that they have not noticed this and offering additional comments, many qualified their response by indicating that this was true for only 1 species (sockeye salmon), or that while they noticed recent size declines, they believe that it is a natural fluctuation.

Concerning management of salmon, survey respondents were asked if they think that current subsistence salmon fishing openers are sufficient to meet local needs. A majority (73%) responded that they were sufficient while 22% responded that they were not. Several respondents commented that they believe the openers are too liberal while others suggested that the season should be open sooner, longer, and for more days to provide additional opportunity. A couple of respondents suggested that commercial and sport fishing regulations provide greater opportunity than those for subsistence harvest of salmon. Several residents commented on the timing of the commercial and subsistence openers, stating that they should either happen at the same time or that there should be more time between the 2 so that subsistence fish will not be sold commercially. Some respondents thought there needed to be more enforcement on the subsistence fisheries.

With low Chinook salmon returns in recent years, several respondents commented specifically on this species. Residents were concerned that the weir on the Situk River was not operated accurately, was too far down the river, and that it was problematic for Chinook salmon to pass through, which is detrimental to the Chinook salmon population but also creates inaccurate Chinook salmon counts. Some felt that Chinook salmon were being kept during the subsistence fishery but not being accounted for and that the mortality rate used for managing the Chinook salmon population is too low and needs more research to spur an update. These concerns complemented the concerns by some residents about the overall management of salmon on the river: it was felt by some that the river is being managed mainly for sport fishing anglers (including those seeking steelhead), and by others that there just needs to be better management in recognition of how important the Situk River is to Yakutat. One resident suggested closing the river for 1 day to all harvest to give the fish a break.

Given concern for stocks and commercial fishing opportunities in other areas of the state, some key respondents indicated that the community has been discussing the possibility of constructing a local salmon hatchery. They indicated that there are strongly held beliefs on each side of the debate. Survey respondents were asked explicitly if they would like to see a salmon hatchery near Yakutat. Approximately 49% of respondents indicated that they would, 38% indicated that they would not, and 13% indicated that they did not know or did not wish to comment. Many respondents who provided additional comments suggested that they would only support a hatchery if it was responsibly operated and/or if wild stocks continued to be prioritized.

### ***Nonsalmon Fish***

Key respondents offered several observations and perceptions related to nonsalmon fish in the Yakutat area, including their importance and management challenges. Among the frequently cited topics was the relationship between steelhead trout and salmon populations in the Situk River. The Situk River is well-known for its steelhead trout population and is prized by non-local sport fishing anglers. Some survey respondents discussed relatives who ate steelhead, others noted that they were not popular and people generally did not eat these, other trouts, or pink salmon. Some respondents suggested that sport fish regulations have favored steelhead trout and sport anglers over local subsistence users of salmon. Some respondents also suggested that steelhead trout, as noted predators of salmon eggs and fry, are detrimental

to local salmon populations and that their abundance is partly to blame for a declining Chinook salmon population in that system.

Survey respondents were asked if steelhead trout are harming local salmon populations. An equal percentage of respondents, approximately 38%, agreed and disagreed with this statement. Among the cultural consensus questions in the survey, this question received the highest percentage of “do not know” responses—24%. Among respondents offering additional comments, some suggested that Dolly Varden and sea otters are of greater concern to salmon stocks. Others indicated that steelhead trout were “kept away” from the river prior to statehood, that they would like to see a commercial fishery for steelhead trout, and that steelhead trout sport fish anglers are exacerbating salmon declines.

Eulachon (hooligan) is also considered an important subsistence resource by many local residents. Survey respondents were asked if their household can get enough hooligan in most years. Approximately 63% of respondents indicated that they could get enough in most years while only 22% indicated that they could not. Many households that responded “do not know” to this question also commented that they do not typically harvest this resource. Among those who agreed and offered additional comments, some suggested that because they only need small amounts, meeting their household needs is not usually difficult. Many more comments were offered among those who disagreed and many of these indicated that hooligan runs have been small in recent years and that in some years they do not seem to return at all.

Several survey and key respondents noted that Pacific herring had recently been returning to Yakutat Bay to spawn in sufficient amounts to make it feasible to harvest herring eggs on hemlock branches. While specifics were not given, for many years the only way these respondents were able to get herring eggs was from Sitka Sound.

Key respondents also indicated some concern over the number of large halibut being harvested from Yakutat waters. They explained that the largest halibut are often less desirable to eat and that these individuals can be the most productive in the population. Some respondents indicated that the largest halibut are prized by sport anglers far more than local subsistence users of the resource. Survey respondents were subsequently asked if too many large halibut were being harvested from Yakutat waters. Approximately 50% responded that they were, 26% that they were not, and 24% said that they did not know (the other statement garnering the highest percentage of this response). Some respondents also indicated that recent regulations that further limit the harvest of large halibut have helped the situation while others stressed a need for increased education and outreach on the topic. Others suggested that there are very few large halibut available for this to continue to occur. Interestingly, one respondent noted that the local cannery does not like to accept halibut heavier than 100 lb, and that halibut of this size do not fit easily into standard-sized commercial boxes.

Key respondents also offered observations of local populations of spiny dogfish and the challenges that this species poses to commercial salmon fishers using nets. They explained that spiny dogfish are common in the Yakutat area and often move in large schools that become tangled in salmon nets. The species is very hard to remove from the nets, can cause human injury given their spiny fins, and that depending on the number of dogfish in a net some fishers have chosen to completely strip and abandon their nets instead of attempting to remove them. One respondent noted that commercial vessels frequently report catches of spiny dogfish over local CB radio frequencies and that many fishers choose to stop fishing when dogfish schools are known to be present. This respondent also indicated that spiny dogfish markets have been somewhat successful in other parts of the world and that many local fishers would like to see a local market to reduce this population and decrease waste.

Survey respondents were asked if they would support a commercial fishery for spiny dogfish near Yakutat. Approximately 70% of respondents indicated that they would support this, 16% indicated that they would not, and 13% indicated that they did not know. Several comments were offered suggesting that supporting such a fishery would lessen the burden that this species has on gear in salmon fisheries, but also indicated concern that it would be difficult to identify a buyer or a cannery that would take them. One respondent noted that he used to use this fish as bait for shrimp.

## Marine Invertebrates and Marine Mammals

Most of the comments about marine invertebrates concerned reductions in stocks. Sea otters were frequently held culpable for these reductions, but halibut, spiny dogfish, and prior commercial fishing were also identified as causing or maintaining reduced populations.

In many areas of Southeast Alaska, an increase in the abundance of sea otters over the past several decades has been a perceived cause of decline in shellfish availability for local residents; key respondents in Yakutat expressed similar concern for sea otters affecting nearby shellfish populations. During the survey, some respondents indicated that sea otter populations have increased because the *Exxon Valdez* oil spill forced the sea otters out of Prince William Sound and into the Yakutat area. This increased population was seen by many to be reducing clams and sea cucumbers, as well as salmon fry and crabs. This was reiterated during the community review meeting when an attendee volunteered that sea otters were “eating them out of house and home.”

An elder in the community explained that sea otters were traditionally harvested when spotted within a large radius surrounding Yakutat with the marine boundary extending to the Yakutat Bench—described as being as far from shore as possible that still allows one to see the tips of the mountains in the distance. This helped to reduce competition between sea otters and humans for shellfish in the vicinity of the community. He explained that because sea otter populations have been allowed to increase substantially in recent years, shellfish populations have plummeted.

Survey respondents were asked if sea otters are affecting their ability to harvest enough shellfish. Approximately 63% of respondents indicated that this was occurring, 23% indicated that it was not occurring, and 13% indicated that they did not know. Among those respondents disagreeing with the statement and offering comments, some reported personal observations of local declines in cockles, clams, and Dungeness crabs. Some indicated that while they have heard this to be true, they have never personally observed the situation.

Also mentioned by key respondents was the state of crab populations in the vicinity of the community. One respondent explained that while Tanner crab populations were once strong enough to support a commercial fishery, mismanagement and overharvest devastated the population. He stated that he would like to see a commercial fishery resume, but that not enough information was available to show that the population has rebounded enough to support this. Survey respondents were subsequently asked if commercial crabbing opportunities should be expanded near Yakutat. Only 24% of respondents indicated that commercial crabbing should expand while 67% indicated that it should not. Many respondents also offered additional commentary, a large majority of whom suggested that they would only support this if the crab population could support it. Many also commented that populations remain low and have not yet rebounded enough for a commercial fishery to take place.

A couple of key respondents also noted the presence of a small pod of beluga whales near the community of Yakutat that primarily reside on the northeast side of Disenchantment Bay near Hubbard Glacier. One respondent explained that relatively little is known about this pod but that it was historically significant to the Tlingit people of Yakutat. He stated that the whales were not historically harvested, that they were revered and sometimes feared (Lucey et al. 2015).

Survey respondents were later asked to weigh in on whether they perceive the local beluga whale population as culturally important to the community of Yakutat. Only 37% indicated that this species was culturally important, 44% indicated that they were not, and 17% indicated that they did not know. Many respondents seemed surprised by this question: some were not aware of the pod’s existence, and others had not heard of a cultural relationship to this species. Among those who indicated the whales are not culturally important and offering additional comments, most were somewhat critical of the suggestion given a general unfamiliarity with the pod, the limited population size, and the relative distance of the pod from the community. Others speculated that they may have been more important in the past, that there is intrinsic value in their existence, and that they may be important ecologically and thus lend themselves to a sense of cultural importance, too.

## Large Land Mammals

Moose and deer have only been available in the Yakutat area since the early to mid-20th century. Moose arrived in the area after having travelled successfully down the Alsek River corridor to the vicinity of Dry Bay while Sitka black-tailed deer were introduced to the area intentionally. Use of these resources may speak to the resiliency of the community in adjusting to fluctuating resource availability. In areas where moose are present in Alaska, they are often highly valued as a subsistence resource given their large size and the amount of resultant meat. Key respondents in this study suggested that moose have become important to the community of Yakutat over time.

Survey respondents were asked if their household relies on moose more than any other resource. While approximately 39% of respondents agreed with this, 59% disagreed. Among respondents who offered additional comments on the matter, many suggested that fish, primarily salmon, were equally important or more important than moose. Some respondents indicated that moose is their household's most important red meat and some indicated that while moose is important to their household, they acknowledge a need to balance this with other resources. A few respondents indicated that deer and moose are equally important to their households.

The general sentiment was that something needed to be done to relieve moose hunting pressure in areas near town. There were many ideas about what should be done, ranging from reducing the harvest limit per household, to opening up the season earlier on the east side of the Dangerous River than the west side, and to raising the overall season quota for moose. Some respondents wanted to see both the deer and moose seasons open earlier, in part because they are too close to the rut and in part because access to hunting areas out of town is difficult.

Some key respondents noted that various households in the community are perceived to take advantage of regulations that allow 1 moose per person until the area's harvest quota is met, believing that for larger households this results in unequal distribution of the resource. Survey respondents were subsequently asked if moose harvest permits should be reduced to 1 animal per "household" annually. Approximately 55% indicated that they agree with a reduction while 34% disagreed and 9% did not know. Additional comments offered by respondents were varied. Some respondents indicated that concern is caused by a limited number of households. Others commented that for larger families a single moose may not be sufficient, that perhaps 2 moose per household would be appropriate, and that alternatives other than harvest reduction should be explored.

As mentioned, deer were intentionally introduced to the Yakutat area and are seemingly appreciated by local residents. Deer populations were observed by respondents to be increasing in number and in habitat, being seen in town further from the islands where they were introduced. Survey respondents were asked if it was a good idea to introduce deer to the Yakutat area. Approximately 95% of respondents agreed that it was a good idea and only 1% disagreed. Several respondents commented that the deer populations fluctuated based on climactic conditions, particularly winter severity. One household indicated that the gene pool is too small and that more should be released to increase genetic diversity.

Key respondents also mentioned local bear populations on several occasions. Bear populations were noted to be very high by some respondents and low by others. One respondent explained that in recent years, bears have increasingly been killed in defense of life and property. Another respondent shared that the problem is improving as a result of fencing at the local refuse facility and increased residential efforts to secure garbage. Survey respondents were asked if too many bears are being killed in defense of life and property. Approximately 28% agreed that this was true and 61% disagreed. Respondents who disagreed and offered comments noted that there has been a decline in the bear population, a recent decline in bear encounters, and improvements as a result of dump upgrades. Some of these individuals indicated that their response would have been different several years ago when negative bear encounters were more prominent.

One key respondent indicated that he does not hunt brown bears because of cultural beliefs. He suggested that brown bears were not traditionally consumed because of their close relationship to human beings. Survey respondents were asked if it is wrong to hunt brown bears because of cultural beliefs. Only 15% of



respondents agreed with this statement while 69% disagreed and 12% did not know. Many respondents were confused by the question's lack of qualification regarding whose cultural beliefs were being referenced, a perceived conflict between supporting another culture's beliefs while not adhering to them personally, and a general unawareness of a cultural belief that brown bears should not be hunted. Some respondents commented that they support hunting bears if done respectfully and the meat is consumed, and that bears should be hunted to reduce danger to humans and as a means of predator control to support deer and moose populations.

One respondent expressed a desire to be able to hunt Dall sheep in the Wrangell-St Elias National Park and Preserve, and another lamented the difficulty in getting goat meat now as compared to decades past.

### **Small Land Mammals and Furbearers**

Several key respondents mentioned locally relevant issues pertaining to small land mammals and furbearers. Among these was a perception by some that local wolf populations were too high and detrimental to moose and deer populations. Survey respondents were asked if wolves are having a negative impact on local moose and deer populations. Approximately 34% of respondents agreed that this was true while 50% disagreed and 16% did not know. Among respondents who disagreed and offered additional comments, comments included that the effect from wolves is natural, that wolves keep the herds healthy, and that the degree of effects from wolves is heightened during winters of heavy snow that prevent ungulate movement. Among those who agreed with the statement, additional comments largely indicated the relationship of the population effects to winter weather conditions and recent observations of growing wolf populations. One respondent noted an observation of a pack of 7 wolves running down a deer on a nearby island in 2015, indicating that he thought packs were growing in size.

One respondent observed that there were more river (land) otters and lynx. Some key respondents also noted expanding beaver populations in the area and resultant changes in freshwater hydrological systems. Survey respondents were asked if they welcome the expansion of local beaver populations. Only 29% of respondents indicated that they did, 54% indicated that they did not, and 17% did not know. Among those who agreed and offered additional comments, several mentioned that beavers can be beneficial to several species but that they need to be managed and kept away from the city limits. Those who disagreed and offered comments suggested that there are too many beavers, that they are concerned about the blocking of streams and rivers for fish passage, and that it can cause access issues for hunting areas. Some respondents indicated that beavers can be a benefit to trappers but that the number of trappers has declined in recent decades.

Some of the key respondents also noted a local decline in trapping activity since the 1950s and 1960s. Survey respondents were asked if they would like to see more local participation in trapping. Approximately 35% of respondents indicated that they would, 44% indicated that they would not, and 21% indicated that they did not know. Among those who supported more participation and offered comments, many suggested that they would like to see trapping knowledge passed on to youth, and that it could be an opportunity to get young people outside. One respondent supports additional trapping if it is done outside of town and another noted that trapping opportunities would increase with additional roads. Among those who did not support additional trapping, few additional comments were offered. One respondent indicated that while he or she was not against it, there were too many traps near town. Another respondent indicated that there was enough trapping activity currently and another said that they disagreed because they like to see these animals near town.

### **Birds and Eggs**

Comments were offered about birds as well as bird eggs. One respondent recalled seeing, when a child, terns diving in the thousands at the mouth of the Situk River, but that is not seen anymore. Regarding bird eggs, some respondents felt bird eggs were more of a delicacy now and felt regulations were too restrictive. Another commented that while it is enjoyable to harvest and eat tern eggs, it is not a dire situation to go without them.

While many key respondents offered their knowledge of birds and eggs in Yakutat, only one question was posed to survey respondents. Some key respondents indicated that egg collecting requires specialized knowledge that not all residents have learned. Survey respondents were therefore asked if their household has the knowledge to harvest bird eggs if they wanted to. Approximately 66% of respondents indicated that they had the knowledge and 31% indicated that they did not.

Responses to this question were varied but while many respondents' immediate response was that they would know how to "harvest" eggs, subsequent discussion often revealed that they were referencing only their ability to "collect" eggs but that they had not considered knowledge of methods that prevent the collection of eggs with developing embryos or the concept of self-limiting harvest from individual nests for population sustainability. Many respondents indicated that they lack this specific knowledge. One respondent noted not currently having the knowledge, but that it could be easily obtained from others in the community. Another respondent expressed the view of not being able to collect eggs due to being non-Native; this is a common misunderstanding in the community: all permanent residents of Yakutat are eligible to collect gull eggs, not just Alaska Native residents.

## **CONCLUSIONS**

Yakutat is a unique community, in terms of its geographic location, its history of settlement, and its recent history. A comparison of its subsistence harvests to other communities in Southeast Alaska highlights this distinctiveness. Per capita harvests in Yakutat in 2015 were higher than the average of all rural Southeast Alaska communities (189 lb per person) (Fall 2016), but just about the same as the average of the other recently updated communities (268 lb per person) (Sill and Koster 2017a:111–b; Table 1-7). Yakutat harvests have decreased since 2000, a trend seen in the other 6 updated communities. But Yakutat is unlike any one of those communities, instead sharing specific characteristics with each, either in terms of demography, income and employment, or subsistence harvests.

### **Demography**

Yakutat (population of 592) is a small- to medium-sized rural community, falling squarely in the middle of the 6 comparison Southeast Alaska study communities of Haines, Hoonah, Angoon, Whale Pass, Hydaburg, and Sitka. It is a mixed community in terms of ethnicity with approximately 60% of residents self-identifying as Alaska Native. Hoonah is the community most similar to Yakutat for these 2 metrics, with a population of 732 people, 64% of whom identify as Alaska Native. Both Yakutat and Hoonah have long-term residents with the average length of residency of household heads in the low 30-year range. In employment and income metrics, Yakutat looks a lot more like Sitka, with a majority of residents employed year-round, roughly 20% of community income coming from sources other than employment, and a high average household and per capita income.

### **Sharing of Wild Resources**

While income and employment characteristics most closely resemble Sitka, subsistence harvests and characteristics in Yakutat do not—if not in overall patterns then in degrees. Sharing is important to every community, but it is particularly so in Yakutat. In 2015, 87% of households shared resources and 97% of households received them; only Hydaburg demonstrated greater levels of sharing. The percentage of households using, attempting to harvest, or harvesting in Yakutat also exceeded all the communities save Whale Pass and Hydaburg, if only by small amounts. The distribution of harvesting effort in Yakutat was somewhat wider than several of the other study communities. The top 25% of households harvested approximately 70% of the entire community harvest in Yakutat in 2015; this is similar to Angoon or Whale Pass, but significantly less than Sitka, Hoonah, or Haines where the top 25% of households harvested 76%–85% of the harvest. The lowest ranked 50% of Yakutat households harvested about 8% of the community harvest in Yakutat, a higher percentage than most of the other communities. In comparison, the lowest ranked 50% of households harvested just 2% of the harvest in Sitka. This is likely a reflection of the importance of engaging in subsistence activities to the vast majority of all Yakutat households, as well as the abundant availability of resources. While past research has shown that households with particular

characteristics (such as involvement in commercial fishing or a high percentage of young adult males) are higher harvesters, the availability of local resources to residents, resources that do not require too much time/expense to access, makes it likely that a broader section of a community can participate in their harvest and use. On average, the lowest ranked one-half of households in Yakutat also used a greater number of resources than in the other study communities, excepting Hydaburg. The difference in the average number of resources used by the top 25% of households compared to the lowest ranked 50% of households was greatest in Hoonah but closely followed by Yakutat.

### **Use and Harvest Characteristics by Resource Category**

Turning to specific resource categories, again similarities and differences between Yakutat and the other study communities emerge. Yakutat households participated to a greater extent in collecting, and harvested more of, all resource categories (except for nonsalmon fish, marine invertebrates, and vegetation) than the other study communities. Of the 3 excepted categories, Yakutat households showed comparatively low use or harvest. The reasons for this likely have to do with Yakutat's geography, regulatory structure, and cultural history.

A greater percentage of Yakutat households attempted to harvest or harvested salmon than any other study community. Hydaburg was a close second, and documented a higher per capita harvest of salmon than Yakutat. Salmon is a culturally important resource to every community in Southeast Alaska. Interestingly, sockeye salmon composed a greater proportion of salmon harvests in Yakutat than the other communities. There are several differences in the regulatory and natural environments between Yakutat and the other study communities. On the regulatory side, Yakutat Area subsistence salmon regulations and permits do not specify open streams or provide salmon harvest limits per water body; elsewhere in Southeast Alaska, fishers are limited to particular streams, open for a specific season, with harvest limits set at each location. There are also multiple salmon streams in the Yakutat vicinity. The Situk River sockeye salmon run is nearby and strong, providing a reliable source of fish for households. Near the confluence of the Situk and Lost rivers is Strawberry Point, where there is a collection of cabins used to support the community's subsistence salmon harvesting efforts. Yakutat retains strong participation in commercial salmon fisheries, which likely contributes to its robust subsistence salmon participation and harvests.

Yakutat also documented the highest use of marine mammals, the highest harvest participation, and the highest per capita harvest amounts. Yakutat residents have a long history of engagement in seal harvesting, tied especially to nearby Disenchantment Bay (Crowell 2016). Hubbard Glacier discharges into Disenchantment Bay and its glacial ice floes provide places for a large harbor seal rookery. During the 19th and 20th centuries nearly all of Yakutat would move to the spring sealing camps in Disenchantment Bay. While seal harvests have declined in Yakutat, it remains an important resource to Yakutat households, both as a source of nutrition and for the making of handicrafts. In 2012, 100% of Alaska Native households in Yakutat used harbor seal and the per capita harvest of harbor seal was higher than any other Southeast Alaska community (Wolfe et al. 2013).

For other resources, the difference in use and harvests in Yakutat compared to other Southeast Alaska communities is due to the mix of species available.

For large land mammals, while harvest and use in Yakutat is close to average for these communities, the resource is vastly different. The harvest is mainly moose, unlike most Southeast Alaska communities, which have deer as the main targeted species, in part because moose are not easily accessible in many Southeast Alaska communities. Yakutat has not only a robust population of moose but also a growing deer population. This may explain in part why Yakutat has not seen a decrease in their large land mammal harvests as has been seen in other communities, except Whale Pass. In terms of small land mammals, while this resource category composes a small percentage of overall harvests in all recently updated communities, it is significantly larger in Yakutat. This is because Yakutat has both food and fur animals available; for example, snowshoe hares are abundant in Yakutat but sparsely populated throughout the rest of Southeast Alaska. Bird eggs are also locally abundant to Yakutat residents; in addition, Yakutat is one of only 4 Southeast Alaska communities that are allowed to harvest gull eggs under the Migratory Bird Treaty Act.



Nonsalmon fish is one of the few categories where harvest and participation is relatively low compared to the other communities. The percent of households harvesting is about average, but the per capita average is one of the lowest estimated. In terms of species harvested, Yakutat has access to eulachon runs, similar to Haines, but also to herring eggs, like in Hydaburg and Sitka, albeit a smaller amount. Halibut harvests drive the overall trends in nonsalmon fish harvests in most Southeast Alaska communities, and Yakutat had a relatively small harvest of halibut: smaller than all communities but Haines. There was also a significant decrease in per capita harvests compared to the 2000 survey. The halibut resource in International Pacific Halibut Commission (IPHC) Area 3A is larger than in 2C, but both have decreased. During surveys and key respondent interviews, a lot of Yakutat residents were concerned with the overharvest of halibut by sport fishing and charter anglers, and they also felt that too many big halibut were being harvested. Halibut were noted as harder to find and harder to harvest. There was also relatively low use and low harvest of marine invertebrates. While sea otters have been identified as a factor influencing decreased marine invertebrate harvests in most of the other study communities, Yakutat has a slightly different history from the other Southeast Alaska communities in that they had a commercial Dungeness crab fishery until it collapsed. Sea otters, common throughout Southeast Alaska now, may be keeping the population from recovering.

In summary, while Yakutat shares some similar patterns in harvest and use of wild resources with other Southeast Alaska communities, its unique characteristics set it apart from other communities in the region that have had subsistence harvest information recently updated.

## **ACKNOWLEDGMENTS**

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## **APPENDIX A—LETTER OF SUPPORT**

# Yakutat Tlingit Tribe

606 Forest Hwy. 10 \* P.O. Box 418 \* Yakutat, Alaska 99689  
Phone (907) 784-3238 \* Fax (907) 784-3595 \* [www.ytttribe.org](http://www.ytttribe.org)



July 15<sup>th</sup>, 2015

Lauren Sill  
Subsistence Resource Specialist III  
Division of Subsistence  
Alaska Department of Fish and Game  
P.O. Box 115526  
Juneau, AK 99811

Dear Lauren,

This letter is to inform you that you have the support of the Yakutat Tlingit Tribe (YTT) for the project to document patterns and trends of wild resource harvests by Yakutat residents and to investigate the resilience and adaptive capacity of our community. We have been provided with the study proposal and we are aware the project will take place mainly throughout 2016. The Division of Subsistence has informed us they will be hiring interested local residents to assist them in collecting information about the use and harvest of wild resources by Yakutat residents. In addition, knowledgeable elders and active harvesters will be sought out for the in-depth interviews about changes in harvesting practices. We understand that the participation of any individual in this research will be completely voluntary and surveys will be anonymous and confidential.

The Yakutat Tlingit Tribe can assist the Division of Subsistence with recommendations about community members who may want to work with researchers on documenting harvests, as well as knowledgeable, long-term residents who may wish to be interviewed for this project. We can also assist the Division in setting up community meetings before the project to inform Yakutat residents of the project as well as after the project is complete to share the information that was learned and to solicit any feedback, comments, or concerns about wild resource harvesting activities and current or past changes.

YTT looks forward to working with the Division of Subsistence on the research into current and past wild resource harvest and use practice of Yakutat residents.

Sincerely,

Victoria L. Demmert  
Tribal President

**MISSION** To preserve, maintain and protect the unique culture, land & resources of Yakutat Tlingit people;  
to maximize our social, health & well-being while creating economic development benefits to all tribal members.



## **APPENDIX B—SURVEY FORM**



# COMPREHENSIVE WILD FOOD HARVEST SURVEY

## YAKUTAT, ALASKA

From January 1, 2015 to December 31, 2015

This survey is used to estimate wild food harvests and to describe rural community economies. We will publish a summary report, and send it to all households in your community. We share this information with the Alaska Department of Fish and Game, the U.S. Fish and Wildlife Service, the U.S. Forest Service, and the National Park Service. We work with the Federal Regional Advisory Councils and with local Fish and Game Advisory Committees to better manage wild food resources.

We will NOT identify your household. We will NOT use this information for enforcement. Participation in this survey is voluntary. Even if you agree to be surveyed, you may skip questions or stop at any time.

HOUSEHOLD ID:

COMMUNITY ID:

Yakutat

373

INTERVIEWER 1:

INTERVIEWER 2:

INTERVIEW DATE:

START TIME:

STOP TIME:

DATA CODED BY:

DATA ENTERED BY:

SUPERVISOR:



### COOPERATING ORGANIZATIONS

#### YAKUTAT TLINGIT TRIBE

716 OCEAN CAPE RD.  
YAKUTAT, AK 99689  
907-784-3238

#### ALASKA DEPARTMENT OF FISH AND GAME DIVISION OF SUBSISTENCE

892 3RD STREET  
DOUGLAS, AK 99801  
907-465-3617

**HOUSEHOLD MEMBERS**

HOUSEHOLD ID

First, I would like to ask about the people in your household, permanent members of your household who sleep at your house. This includes students who return home every summer. I am NOT interested in people who lived with you temporarily, even if they stayed several months.

Last year, that is, between January 1, 2015 and December 31, 2015 WHO were the head or heads of your household?

Is this person answering questions on this survey?	How is this person related to HEAD 1?	Is this person MALE or FEMALE?	Is this person an ALASKA NATIVE?	In what YEAR was this person born?	Where were parents living when this person was born?	How many years has this person lived in Yakutat?	
ID #	(circle)	(relation)	(circle)	(circle)	(year)	(AK city or state)	(number)
HEAD 1	Y N		M F	Y N			
1							
NEXT enter spouse or partner. If a household has a SINGLE HEAD, leave HEAD 2 row BLANK and move to PERSON 3.							
HEAD 2	Y N		M F	Y N			
2							
BELOW, enter children (oldest to youngest), grandchildren, grandparents, or anyone else living full-time in this household.							
PERSON 03	Y N		M F	Y N			
3							
PERSON 04	Y N		M F	Y N			
4							
PERSON 05	Y N		M F	Y N			
5							
PERSON 06	Y N		M F	Y N			
6							
PERSON 07	Y N		M F	Y N			
7							
PERSON 08	Y N		M F	Y N			
8							
PERSON 09	Y N		M F	Y N			
9							
PERSON 10	Y N		M F	Y N			
10							
PERSON 11	Y N		M F	Y N			
11							
PERSON 12	Y N		M F	Y N			
12							
PERSON 13	Y N		M F	Y N			
13							

PERMANENT HH MEMBERS: 01

YAKUTAT: 373

**HOUSEHOLD PARTICIPATION**

To continue our questions about people in your household, I would like to ask a few questions about participation in harvesting wild foods...

Between January 1, 2015 and December 31, 2015

Did this person ....

PERSON ID# FROM PAGE 2	FISH		LARGE LAND MAMMALS		SMALL LAND MAMMALS/ FURBEARERS		MARINE MAMMALS		BIRDS AND EGGS		PLANTS / BERRIES / WOOD	
	FISH FOR	PROCESS	HUNT	PROCESS	HUNT / TRAP	PROCESS	HUNT	PROCESS	HUNT / GATHER	PROCESS	HUNT / GATHER	PROCESS
ID #	(circle)	(circle)	(circle)	(circle)	(circle)	(circle)	(circle)	(circle)	(circle)	(circle)	(circle)	(circle)
HEAD 1	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
1												
HEAD 2	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
2												
PERSON 03	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
3												
PERSON 04	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
4												
PERSON 05	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
5												
PERSON 06	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
6												
PERSON 07	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
7												
PERSON 08	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
8												
PERSON 09	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
9												
PERSON 10	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
10												
PERSON 11	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
11												
PERSON 12	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
12												
PERSON 13	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
13												

PERMANENT HH MEMBERS: 01

YAKUTAT: 373

**RETAINED COMMERCIAL HARVESTS**

HOUSEHOLD ID

1. Do you or members of your household USUALLY participate in any commercial fishery?..... Y N

2. During the last year (between January 1, 2015 and December 31, 2015),  
did you, or members of your household PARTICIPATE in any commercial fishery?..... Y N

IF the answer to QUESTION 2 is NO, go to PAGE 6.

IF the answer is YES, continue on this page ...

During the last year,<sup>1</sup>

did you or members of your household...

A ... FISH commercially for \_\_\_\_\_?  
B ... KEEP any \_\_\_\_\_ from your commercial  
catch for your own use<sup>2</sup> or to share?if keep  
is "yes"C Was the \_\_\_\_\_ that you kept  
INCIDENTAL<sup>4</sup> catch?Please estimate how many fish ALL MEMBERS OF YOUR HOUSEHOLD  
removed from commercial harvests for personal use during the last year.Include COMMERCIALY HARVESTED fish that members of this  
household gave away, ate fresh, fed to dogs, lost to spoilage, or got by  
helping others. If helping others, report ONLY THIS HOUSEHOLD'S share.

Read names below in blanks above	A COMM FISH?	B KEEP?	C INCI?	How many were removed for your OWN USE? <sup>5</sup> <i>number</i>	How many were removed for your CREW? <sup>5</sup> <i>number</i>	How many were removed to give to OTHERS? <i>number</i>	Units <sup>3</sup> <i>specify</i>	<i>comments</i>
CHINOOK (KING) SALMON	Y N	Y N	Y N				IND	
113000001								
COHO (SILVER) SALMON	Y N	Y N	Y N				IND	
112000001								
SOCKEYE (RED) SALMON	Y N	Y N	Y N				IND	
115000001								
CHUM SALMON	Y N	Y N	Y N				IND	
111000001								
PINK SALMON	Y N	Y N	Y N				IND	
114000001								
UNKNOWN SALMON	Y N	Y N	Y N				IND	
119000001								
HALIBUT	Y N	Y N	Y N				LBS <sup>6</sup>	
121800001								
BLACK ROCKFISH	Y N	Y N	Y N				IND	
122602001								
YELLOW EYE ROCKFISH (RED SNAPPER)	Y N	Y N	Y N				IND	
122606001								
COD (GRAY)	Y N	Y N	Y N				IND	
121004001								

...Continue on next page

1 "LAST YEAR" means between January 1, 2015 and December 31, 2015.

2 "USE" includes eating, feeding to dogs, sharing or trading with others, etc.

3 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

4 "INCIDENTAL CATCH" means the fish kept was not being commercially fished. For example, a king salmon kept from a chum commercial fishery.

5 Double counting (captains' removals for crew members and crew members' removal for own uses) is fixed in analysis. Collect both.

6 Record halibut in "USABLE POUNDS"(calculated from the whole fish weight using a conversion factor of 0.7).

## RETAINED COMMERCIAL HARVESTS

HOUSEHOLD ID

.... CONTINUED from previous page

During the last year,<sup>1</sup>

did you or members of your household...

A ... FISH commercially for \_\_\_\_\_?

B ... KEEP any \_\_\_\_\_ from your commercial catch for your own use<sup>2</sup> or to share?C Was the \_\_\_\_\_ that you kept INCIDENTAL<sup>4</sup> catch?if keep  
is "yes"

Please estimate how many fish ALL MEMBERS OF YOUR HOUSEHOLD removed from commercial harvests for personal use during the last year.

Include COMMERCIALY HARVESTED fish that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If helping others, report ONLY THIS HOUSEHOLD'S share.

Read names below in blanks above	A COMM FISH?		B KEEP?		C INCI?		How many were removed for your OWN USE? <sup>5</sup>	How many were removed for your CREW? <sup>5</sup>	How many were removed to give to OTHERS?	Units <sup>3</sup>	comments
	number	number	number	number	number	number	specify				
SABLEFISH (BLACK COD)	Y	N	Y	N	Y	N				IND	
122800001											
LINGCOD	Y	N	Y	N	Y	N				IND	
121606001											
HERRING SPAWN ON KELP	Y	N	Y	N	Y	N				GAL	
120306001											
DUNGENESS CRAB	Y	N	Y	N	Y	N				IND	
501004001											
RED KING CRAB	Y	N	Y	N	Y	N				IND	
501008081											
TANNER CRAB	Y	N	Y	N	Y	N				IND	
501012991											
SHRIMP	Y	N	Y	N	Y	N				LBS	
503400001											
SCALLOPS	Y	N	Y	N	Y	N				IND	
502699001											
OCTOPUS	Y	N	Y	N	Y	N				IND	
502200001											
	Y	N	Y	N	Y	N				GAL	
	Y	N	Y	N	Y	N				GAL	

<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.

<sup>2</sup> "USE" includes eating, feeding to dogs, sharing or trading with others, etc.

<sup>3</sup> UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

<sup>4</sup> "INCIDENTAL CATCH" means the fish kept was not being commercially fished. For example, a king salmon kept from a chum commercial fishery.

<sup>5</sup> Double counting (captains' removals for crew members and crew members' removal for own uses) is fixed in analysis. Collect both.

COMMERCIAL FISHING: 03

YAKUTAT: 373

**HARVESTS: SALMON**

HOUSEHOLD ID

1. Do you or members of your household USUALLY fish for salmon for subsistence, personal use, or sport?..... Y N

2. During the last year (between January 1, 2015 and December 31, 2015),  
did you, or members of your household USE or TRY TO HARVEST salmon?..... Y N

IF the answer to QUESTION 2 is NO, to to the NEXT PAGE.

IF the answer is YES, continue on this page ...

During the last year,<sup>1</sup>

did you or members of your household...

- A ... use<sup>2</sup> \_\_\_\_\_?
- B ... receive \_\_\_\_\_ from another HH or community
- C ... give \_\_\_\_\_ to another HH or community?
- D ... try<sup>2</sup> to harvest \_\_\_\_\_?
- E ... actually harvest any \_\_\_\_\_?

if harvest  
is "yes"

Read names below in blanks above	A	B	C	D	E
	USE	REC	GIVE	TRY	HAR

CHINOOK SALMON	Y	N	Y	N	Y	N	Y	N	Y	N		/	IND
113000000													
COHO SALMON	Y	N	Y	N	Y	N	Y	N	Y	N		/	IND
112000000													
SOCKEYE SALMON	Y	N	Y	N	Y	N	Y	N	Y	N		/	IND
115000000													
CHUM SALMON	Y	N	Y	N	Y	N	Y	N	Y	N		/	IND
111000000													
PINK SALMON	Y	N	Y	N	Y	N	Y	N	Y	N		/	IND
114000000													
SALMON (UNKNOWN)	Y	N	Y	N	Y	N	Y	N	Y	N		/	IND
119000000													
	Y	N	Y	N	Y	N	Y	N	Y	N		/	IND
	Y	N	Y	N	Y	N	Y	N	Y	N		/	IND
	Y	N	Y	N	Y	N	Y	N	Y	N		/	IND
	Y	N	Y	N	Y	N	Y	N	Y	N		/	IND

Please estimate how many salmon ALL MEMBERS OF YOUR  
HOUSEHOLD got during the last year. How many were harvested  
with ....INCLUDE salmon that members of this household gave away, ate  
fresh, fed to dogs, lost to spoilage, or got by helping others. If  
fishing with or helping others, report ONLY THIS HOUSEHOLD'S  
share of the harvest. DO NOT INCLUDE catch and release fish or  
retained commercial harvests.

DIP NET	GILL NET OR SEINE	TROLL GEAR	ROD & REEL <sup>3</sup>	OTHER GEAR (specify type)	Units <sup>4</sup>
(number harvested by each gear type)				amount / type	specify

1 "LAST YEAR" means between January 1, 2015 and December 31, 2015.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 "ROD AND REEL" includes fish caught in open water with a hook and a line attached to a rod or a pole. Jigging through the ice is "ice fishing."

4 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

**HARVEST SUMMARY: SALMON**

HOUSEHOLD ID

If this household did NOT USE or HARVEST salmon last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

**MAPPING***Refer to data collection maps and mapping instructions to map salmon...***ASSESSMENTS: SALMON**

110000000

To conclude our salmon section, I am going to ask a few general questions about salmon.

**During the last year,<sup>1</sup>**

... did your household use LESS, SAME, or MORE salmon than in recent years? ..... X L S M

IF LESS or MORE ...

X = do not use

WHY was your use different?

1

2

**During the last year,<sup>1</sup>**

...did your household GET ENOUGH salmon?..... Y N

If NO...

What KIND of salmon did you need?

How would you describe the impact to your household of not getting enough salmon last year?

... not noticeable?

... minor ?

... major?

... Severe?

(0)

(1)

(2)

(3)

...did your household do anything DIFFERENTLY because you did not get enough salmon?..... Y N

If YES...

What did your household do differently?

1

2

We would like to know your opinion about wild resources in Yakutat. Please indicate whether you agree or disagree with each statement I am going to read.

1. Ophir Creek is a good option for harvesting sockeye salmon locally.

**AGREE DISAGREE**

1

2. I have noticed salmon becoming smaller in size.

**AGREE DISAGREE**

2

3. Commercial salmon fishing is an important aspect of Yakutat's economy.

**AGREE DISAGREE**

3

4. Non-local sportfishing anglers frequently abuse harvest limits in Yakutat area rivers.

**AGREE DISAGREE**

4

5. I would like to see a salmon hatchery near Yakutat.

**AGREE DISAGREE**

5

6. Current subsistence salmon fishing openings are sufficient to meet local needs.

**AGREE DISAGREE**

6

<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.



**HARVESTS: OTHER FISH**

HOUSEHOLD ID

1. Do you or members of your household USUALLY fish for other fish for subsistence, personal use, or sport?..... Y N

2. During the last year (between January 1, 2015 and December 31, 2015),  
did you, or members of your household USE or TRY TO HARVEST other fish?..... Y NIF the answer to QUESTION 2 is NO, to to the **NEXT PAGE**.

IF the answer is YES, continue on this page ...

During the last year,<sup>1</sup>

did you or members of your household...

A ... use<sup>2</sup> \_\_\_\_\_?

B ...receive \_\_\_\_\_ from another HH or community

C ...give \_\_\_\_\_ to another HH or community?

D ...try<sup>2</sup> to harvest \_\_\_\_\_?

E ...actually harvest any \_\_\_\_\_?

if  
harvest  
is "yes"Please estimate how many other fish ALL MEMBERS OF YOUR  
HOUSEHOLD got during the last year. How many were harvested  
with ....INCLUDE other fish that members of this household gave away,  
ate fresh, fed to dogs, lost to spoilage, or got by helping others. If  
fishing with or helping others, report ONLY THIS HOUSEHOLD'S  
share of the harvest. DO NOT INCLUDE catch and release fish or  
retained commercial harvests.

Read names below in blanks above	A USE	B REC	C GIVE	D TRY	E HAR	GILL NET OR SEINE	LONG- LINE/ SKATE	TROLL GEAR	ROD & REEL <sup>3</sup>	OTHER GEAR (specify type)	Units <sup>4</sup>
	(number harvested by each gear type)					amount / type		specify			
HALIBUT	Y N	Y N	Y N	Y N	Y N					/	LBS <sup>5</sup>
121800000											
HERRING	Y N	Y N	Y N	Y N	Y N					/	GAL
120200000											
HERRING SPAWN ON KELP	Y N	Y N	Y N	Y N	Y N					/	GAL
120306000											
HERRING EGGS ON HAIR SEAWEED	Y N	Y N	Y N	Y N	Y N					/	GAL
120308000											
HERRING EGGS ON HEMLOCK BRANCHES	Y N	Y N	Y N	Y N	Y N					/	GAL
120310000											
BLACK ROCKFISH	Y N	Y N	Y N	Y N	Y N					/	IND
122602000											
YELLOWEYE ROCKFISH (RED SNAPPER)	Y N	Y N	Y N	Y N	Y N					/	IND
122606000											
SABLEFISH (BLACK COD)	Y N	Y N	Y N	Y N	Y N					/	IND
122800000											
COD (GRAY)	Y N	Y N	Y N	Y N	Y N					/	IND
121004000											
TOM COD	Y N	Y N	Y N	Y N	Y N					/	IND
121008000											

...Continue on next page

<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.<sup>2</sup> "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.<sup>3</sup> "ROD AND REEL" includes fish caught in open water with a hook and a line attached to a rod or a pole. Jigging through the ice is "ice fishing."<sup>4</sup> UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.<sup>5</sup> Record halibut in "USABLE POUNDS" (calculated from the whole fish weight using a conversion factor of 0.7).**OTHER FISH: 06****YAKUTAT: 373**

**HARVESTS: OTHER FISH**

HOUSEHOLD ID

...continued from previous page

IF the answer is YES, continue on this page ...

During the last year,<sup>1</sup>

did you or members of your household...

- A ... use<sup>2</sup> \_\_\_\_\_?  
 B ... receive \_\_\_\_\_ from another HH or community  
 C ... give \_\_\_\_\_ to another HH or community?  
 D ... try<sup>2</sup> to harvest \_\_\_\_\_?  
 E ... actually harvest any \_\_\_\_\_?

if  
harvest  
is "yes"

Read names below in blanks above	A	B	C	D	E
	USE	REC	GIVE	TRY	HAR

FLOUNDER	Y N	Y N	Y N	Y N	Y N
----------	-----	-----	-----	-----	-----

121499000					
SOLE	Y N	Y N	Y N	Y N	Y N

123699000					
LINGCOD	Y N	Y N	Y N	Y N	Y N

121606000					
ROCK GREENLING	Y N	Y N	Y N	Y N	Y N

121608000					
RED IRISH LORD	Y N	Y N	Y N	Y N	Y N

123006020					
SCULPIN	Y N	Y N	Y N	Y N	Y N

123099000					
DOGFISH	Y N	Y N	Y N	Y N	Y N

123202000					
SKATES	Y N	Y N	Y N	Y N	Y N

123400000					
HOOLIGAN	Y N	Y N	Y N	Y N	Y N

120404000					
SMELT	Y N	Y N	Y N	Y N	Y N

120410000					
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Please estimate how many other fish ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested with ....

INCLUDE other fish that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest. DO NOT INCLUDE catch and release fish or retained commercial harvests.

GILL NET OR SEINE	LONG- LINE/ SKATE	TROLL GEAR	ROD & REEL <sup>3</sup>	OTHER GEAR (specify type)	Units <sup>4</sup>
(number harvested by each gear type)				amount / type	specify

				/	IND.
--	--	--	--	---	------

				/	IND.
--	--	--	--	---	------

				/	IND.
--	--	--	--	---	------

				/	IND.
--	--	--	--	---	------

				/	IND.
--	--	--	--	---	------

				/	IND.
--	--	--	--	---	------

				/	IND.
--	--	--	--	---	------

				/	IND.
--	--	--	--	---	------

				/	IND.
--	--	--	--	---	------

				/	GAL.
--	--	--	--	---	------

...Continue on the next page

1 "LAST YEAR" means between January 1, 2015 and December 31, 2015.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 "ROD AND REEL" includes fish caught in open water with a hook and a line attached to a rod or a pole. Jiggling through the ice is "ice fishing."

4 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

**OTHER FISH: 06****YAKUTAT: 373**

**HARVESTS: OTHER FISH**

HOUSEHOLD ID

...continued from previous page

IF the answer is YES, continue on this page ...

During the last year,<sup>1</sup>

did you or members of your household...

- A ... use<sup>2</sup> \_\_\_\_\_?
- B ... receive \_\_\_\_\_ from another HH or community
- C ... give \_\_\_\_\_ to another HH or community?
- D ... try<sup>2</sup> to harvest \_\_\_\_\_?
- E ... actually harvest any \_\_\_\_\_?

if  
harvest  
is "yes"

Please estimate how many other fish ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested with ....

INCLUDE other fish that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest. DO NOT INCLUDE catch and release fish or retained commercial harvests.

Read names below in blanks above	A USE	B REC	C GIVE	D TRY	E HAR	GILL NET OR SEINE	LONG- LINE /SKATE	TROLL GEAR	ROD & REEL <sup>3</sup>	OTHER GEAR (specify type)	Units <sup>4</sup>
						(number harvested by each gear type)				amount / type	specify
BROOK TROUT	Y N	Y N	Y N	Y N	Y N					/	IND.
125004000											
DOLLY VARDEN	Y N	Y N	Y N	Y N	Y N					/	IND.
125006990											
CUTTHROAT TROUT	Y N	Y N	Y N	Y N	Y N					/	IND.
126202000											
RAINBOW TROUT	Y N	Y N	Y N	Y N	Y N					/	IND.
126204000											
STEELHEAD	Y N	Y N	Y N	Y N	Y N					/	IND.
126206000											
GRAYLING	Y N	Y N	Y N	Y N	Y N					/	IND.
125200000											
	Y N	Y N	Y N	Y N	Y N					/	IND.
	Y N	Y N	Y N	Y N	Y N					/	IND.
	Y N	Y N	Y N	Y N	Y N					/	IND.
	Y N	Y N	Y N	Y N	Y N					/	IND.

During the last year, did your household use or try to harvest any other kind of other fish, such as whitefish or char?

Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.<sup>2</sup> "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.<sup>3</sup> "ROD AND REEL" includes fish caught in open water with a hook and a line attached to a rod or a pole. Jiggling through the ice is "ice fishing."<sup>4</sup> UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.**OTHER FISH: 06****YAKUTAT: 373**

**HARVEST SUMMARY: OTHER FISH**

HOUSEHOLD ID

If this household did NOT USE or HARVEST other fish last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

**MAPPING***Refer to data collection maps and mapping instructions to map other fish...***ASSESSMENTS: OTHER FISH**

120000000

To conclude our other fish section, I am going to ask a few general questions about other fish.

**During the last year,<sup>1</sup>**

... did your household use LESS, SAME, or MORE other fish than in recent years? ..... X L S M

IF LESS or MORE ...

X = do not use

WHY was your use different?

1

2

**During the last year,<sup>1</sup>**

...did your household GET ENOUGH other fish?..... Y N

If NO...

What KIND of other fish did you need?

How would you describe the impact to your household of not getting enough other fish last year?

... not noticeable?

(0)

... minor ?

(1)

... major?

(2)

... Severe?

(3)

...did your household do anything DIFFERENTLY because you did not get enough other fish?..... Y N

If YES...

What did your household do differently?

1

2

We would like to know your opinion about wild resources in Yakutat. Please indicate whether you agree or disagree with each statement I am going to read.

1. My household can get enough hooligan most years.

**AGREE DISAGREE**

1

2. Steelhead trout are harming local salmon populations.

**AGREE DISAGREE**

2

3. I would support a commercial fishery for spiny dogfish.

**AGREE DISAGREE**

3

4. Too many large halibut are being harvested from Yakutat waters.

**AGREE DISAGREE**

4

<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.

**HARVESTS: MARINE INVERTEBRATES**

HOUSEHOLD ID

1. Do you or members of your household USUALLY harvest marine invertebrates for subsistence, personal use, or sport? Y N

2. During the last year (between January 1, 2015 and December 31, 2015),  
did you, or members of your household USE or TRY TO HARVEST marine invertebrates?..... Y N

IF the answer to QUESTION 2 is NO, to to the NEXT PAGE.

IF the answer is YES, continue on this page ...

During the last year,<sup>1</sup>

did you or members of your household...

- A ... use<sup>2</sup> \_\_\_\_\_?
- B ...receive \_\_\_\_\_ from another HH or community
- C ...give \_\_\_\_\_ to another HH or community?
- D ...try<sup>3</sup> to harvest \_\_\_\_\_?
- E ...actually harvest any \_\_\_\_\_?

if  
harvest  
is "yes"

Please estimate how many marine invertebrates ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested with ....

INCLUDE marine invertebrates that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If harvesting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest. DO NOT INCLUDE marine invertebrates caught commercially, or were not retained.

Read names below in blanks above	A	B	C	D	E
	USE	REC	GIVE	TRY	HAR

AMOUNT	Units <sup>4</sup>	COMMENTS
(amt)	specify	(text)

DUNGENESS CRAB	Y N	Y N	Y N	Y N	Y N	IND
501004000						
RED KING CRAB	Y N	Y N	Y N	Y N	Y N	IND
501008080						
TANNER CRAB	Y N	Y N	Y N	Y N	Y N	IND
501012990						
ABALONE	Y N	Y N	Y N	Y N	Y N	IND
500200000						
BLACK (SMALL) CHITONS (GUMBOOTS)	Y N	Y N	Y N	Y N	Y N	GAL
500408000						
RED (LARGE) CHITONS (LADY SLIPPERS)	Y N	Y N	Y N	Y N	Y N	GAL
500404000						
BUTTER CLAMS	Y N	Y N	Y N	Y N	Y N	GAL
500602000						
HORSE CLAMS (GAPER)	Y N	Y N	Y N	Y N	Y N	GAL
500606000						
PACIFIC LITTLENECK CLAMS (STEAMERS)	Y N	Y N	Y N	Y N	Y N	GAL
500608000						
RAZOR CLAMS	Y N	Y N	Y N	Y N	Y N	GAL
500612000						

...Continue on the next page

1 "LAST YEAR" means between January 1, 2015 and December 31, 2015.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 "ROD AND REEL" includes fish caught in open water with a hook and a line attached to a rod or a pole. Jigging through the ice is "ice fishing."

4 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

**MARINE INVERTEBRATES: 08****YAKUTAT: 373**

**HARVESTS: MARINE INVERTEBRATES**

HOUSEHOLD ID

...continued from previous page

During the last year,<sup>1</sup>

did you or members of your household...

- A ... use<sup>2</sup> \_\_\_\_\_?
- B ...receive \_\_\_\_\_ from another HH or community
- C ...give \_\_\_\_\_ to another HH or community?
- D ...try<sup>2</sup> to harvest \_\_\_\_\_?
- E ...actually harvest any \_\_\_\_\_?

if harve  
is "yes"

Please estimate how many marine invertebrates ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested with ....

INCLUDE marine invertebrates that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If harvesting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest. DO NOT INCLUDE marine invertebrates caught commercially, or were not retained.

Read names below in blanks above	A	B	C	D	E
	USE	REC	GIVE	TRY	HAR

AMOUNT	Units <sup>4</sup>	COMMENTS
(amt)	specify	(text)

COCKLES	Y	N	Y	N	Y	N	Y	N	Y	N	GAL	
500899000												
WEATHERVANE SCALLOPS	Y	N	Y	N	Y	N	Y	N	Y	N	GAL	
502602000												
GEODUCKS	Y	N	Y	N	Y	N	Y	N	Y	N	GAL	
501200000												
MUSSELS	Y	N	Y	N	Y	N	Y	N	Y	N	GAL	
502099000												
SHRIMP	Y	N	Y	N	Y	N	Y	N	Y	N	GAL	
503400000												
OCTOPUS	Y	N	Y	N	Y	N	Y	N	Y	N	GAL	
502200000												
SEA CUCUMBER (YE/IN)	Y	N	Y	N	Y	N	Y	N	Y	N	GAL	
503000000												
SQUID	Y	N	Y	N	Y	N	Y	N	Y	N	GAL	
503800000												
URCHIN (SPECIFY)	Y	N	Y	N	Y	N	Y	N	Y	N	GAL	
503299000												
	Y	N	Y	N	Y	N	Y	N	Y	N	GAL	
	Y	N	Y	N	Y	N	Y	N	Y	N	GAL	

During the last year, did your household use or try to harvest any other kind of Marine invertebrates?..... Y N

<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.<sup>2</sup> "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.<sup>3</sup> "ROD AND REEL" includes fish caught in open water with a hook and a line attached to a rod or a pole. Jigging through the ice is "other gear."<sup>4</sup> UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.**MARINE INVERTEBRATES: 08****YAKUTAT: 373**

**HARVEST SUMMARY: MARINE INVERTEBRATES**

HOUSEHOLD ID

If this household did NOT USE or HARVEST marine invertebrates last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

**MAPPING***Refer to data collection maps and mapping instructions to map marine invertebrates...***ASSESSMENTS: MARINE INVERTEBRATES**

500000000

To conclude our marine invertebrates section, I am going to ask a few general questions about marine invertebrates.

**During the last year,<sup>1</sup>**... did your household use *LESS, SAME, or MORE* marine invertebrates than in recent years? ..... X L S M ☐

IF LESS or MORE ...

X = do not use

WHY was your use different? \_\_\_\_\_

1 ☐2 ☐**During the last year,<sup>1</sup>**...did your household GET ENOUGH marine invertebrates?..... Y N ☐

If NO...

What KIND of marine invertebrates did you need? \_\_\_\_\_

How would you describe the impact to your household of not getting enough marine invertebrates last year? ... *not noticeable?* ... *minor ?* ... *major?* ... *Severe?*  
(0) (1) (2) (3) ☐...did your household do anything DIFFERENTLY because you did not get enough marine invertebrates?..... Y N ☐

If YES...

What did your household do differently? \_\_\_\_\_

1 ☐2 ☐

We would like to know your opinion about wild resources in Yakutat. Please indicate whether you agree or disagree with each statement I am going to read.

1. Sea otters are affecting my ability to harvest enough shellfish.

**AGREE DISAGREE** \_\_\_\_\_1 ☐

2. Commercial crabbing opportunities should be expanded near Yakutat.

**AGREE DISAGREE** \_\_\_\_\_2 ☐<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.



**HARVESTS: LARGE LAND MAMMALS**

HOUSEHOLD ID

1. Do you or members of your household USUALLY hunt for large land mammals?

Y N

2. During the last year (between January 1, 2015 and December 31, 2015),

did you, or members of your household USE or TRY TO HARVEST large land mammals?..... Y N

IF the answer to QUESTION 2 is NO, to to the *NEXT PAGE*.

IF the answer is YES, continue on this page ...

During the last year,<sup>1</sup>

did you or members of your household...

A ... use<sup>2</sup> \_\_\_\_\_?

B ...receive \_\_\_\_\_ from another HH or community

C ...give \_\_\_\_\_ to another HH or community?

D ...try<sup>2</sup> to harvest \_\_\_\_\_?

E ...actually harvest any \_\_\_\_\_?

if  
harvest  
is "yes"

Read names below in blanks above	A	B	C	D	E
	USE	REC	GIVE	TRY	HAR

**DEER**

Y N Y N Y N Y N Y N

211200000					
211200001					
211200002					
211200009					

**MOOSE**

Y N Y N Y N Y N Y N

211800000					
211800001					
211800002					
211800009					

**BROWN BEAR**

Y N Y N Y N Y N Y N

210800000					
-----------	--	--	--	--	--

**BLACK BEAR**

Y N Y N Y N Y N Y N

210600000					
-----------	--	--	--	--	--

**CARIBOU**

Y N Y N Y N Y N Y N

211000000					
-----------	--	--	--	--	--

**DALL SHEEP**

Y N Y N Y N Y N Y N

212200000					
-----------	--	--	--	--	--

**GOAT**

Y N Y N Y N Y N Y N

211600000					
-----------	--	--	--	--	--

Y N Y N Y N Y N Y N

--	--	--	--	--	--

Please estimate how many large land mammals ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested in ....  
INCLUDE large land mammals that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

SEX	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS <sup>3</sup>
M/F	(specify amount harvested per month)													(specify)

M														IND
F														IND
UNK														IND

1														
2														
-9														

M														IND
F														IND
UNK														IND

1														
2														
-9														

IND

IND

IND

IND

IND

IND

During the last year, did your household use or try to harvest any other kind of large land mammals, such as elk?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

1 "LAST YEAR" means between January 1, 2015 and December 31, 2015.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

**LARGE LAND MAMMALS: 10****YAKUTAT: 373**

**HARVEST SUMMARY: LARGE LAND MAMMALS**

HOUSEHOLD ID

If this household did NOT USE or HARVEST large land mammals last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

**MAPPING***Refer to data collection maps and mapping instructions to map large land mammals...***ASSESSMENTS: LARGE LAND MAMMALS**

210000000

To conclude our large land mammals section, I am going to ask a few general questions about large land mammals.

**During the last year,<sup>1</sup>**

... did your household use LESS, SAME, or MORE large land mammals than in recent years? ..... X L S M

IF LESS or MORE ...

X = do not use

WHY was your use different?

1

2

**During the last year,<sup>1</sup>**

... did your household GET ENOUGH large land mammals? ..... Y N

If NO...

What KIND of large land mammals did you need?

How would you describe the impact to your household of not getting enough large land mammals last year?

... not noticeable?  
(0)... minor ?  
(1)... major?  
(2)... Severe?  
(3)

... did your household do anything DIFFERENTLY because you did not get enough large land mammals? ..... Y N

If YES...

What did your household do differently?

1

2

We would like to know your opinion about wild resources in Yakutat. Please indicate whether you agree or disagree with each statement I am going to read.

1. My household relies on moose more than any other wild resource.

**AGREE DISAGREE**

1

2. Moose harvest permits should be reduced to one animal per household annually.

**AGREE DISAGREE**

2

3. It was a good idea to introduce deer to the Yakutat area.

**AGREE DISAGREE**

3

4. It is wrong to hunt brown bears because of cultural beliefs.

**AGREE DISAGREE**

4

5. Too many bears are being killed in defense of life and property.

**AGREE DISAGREE**

5

<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.

**HARVESTS: SMALL LAND MAMMALS OR FURBEARERS**HOUSEHOLD ID  1. Do you or members of your household USUALLY hunt or trap for small land mammals or furbearers?..... Y N  2. During the last year (between January 1, 2015 and December 31, 2015),  
did you, or members of your household USE or TRY TO HARVEST small land mammals or furbearers?..... Y N  IF the answer to QUESTION 2 is NO, to to the **NEXT PAGE**.

IF the answer is YES, continue on this page ...

**During the last year,<sup>1</sup>****did you or members of your household...**

- A ... use<sup>2</sup> \_\_\_\_\_?
- B ...receive \_\_\_\_\_ from another HH or community
- C ...give \_\_\_\_\_ to another HH or community?
- D ...try<sup>2</sup> to harvest \_\_\_\_\_?
- E ...actually harvest any \_\_\_\_\_?

if  
harvest  
is "yes"

Please estimate how many small land mammals or furbearers ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested in ....

INCLUDE small land mammals or furbearers that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting or trapping with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below in blanks above	A USE	B REC	C GIVE	D TRY	E HAR	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	NUMBER USED FOR FUR ONLY	UNITS <sup>3</sup>
						(specify amount harvested per month)												(amount)	specify	
BEAVER	Y N	Y N	Y N	Y N	Y N														IND.	
220200000																				
SNOWSHOE HARE	Y N	Y N	Y N	Y N	Y N														IND.	
221004000																				
MARMOT	Y N	Y N	Y N	Y N	Y N														IND.	
221800000																				
MUSKRAT	Y N	Y N	Y N	Y N	Y N														IND.	
222400000																				
PORCUPINE	Y N	Y N	Y N	Y N	Y N														IND.	
222600000																				
TREE SQUIRREL	Y N	Y N	Y N	Y N	Y N														IND.	
222804000																				
	Y N	Y N	Y N	Y N	Y N														IND.	
	Y N	Y N	Y N	Y N	Y N														IND.	
	Y N	Y N	Y N	Y N	Y N														IND.	
	Y N	Y N	Y N	Y N	Y N														IND.	

...Continue on next page

<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.<sup>2</sup> "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.<sup>3</sup> UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.**SMALL LAND MAMMALS OR FURBEARERS: 14****YAKUTAT: 373**

**HARVESTS: SMALL LAND MAMMALS OR FURBEARERS**

HOUSEHOLD ID

...continued from previous page

During the last year,<sup>1</sup>

did you or members of your household...

- A ... use<sup>2</sup> \_\_\_\_\_?
- B ...receive \_\_\_\_\_ from another HH or community
- C ...give \_\_\_\_\_ to another HH or community?
- D ...try<sup>2</sup> to harvest \_\_\_\_\_?
- E ...actually harvest any \_\_\_\_\_?

if  
harvest  
is "yes"

Please estimate how many small land mammals or furbearers ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested in ....

INCLUDE small land mammals or furbearers that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting or trapping with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below in blanks above	A	B	C	D	E	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	NUMBER USED FOR FUR ONLY	UNITS <sup>3</sup>
	USE	REC	GIVE	TRY	HAR	(specify amount harvested per month)													(amount)	specify
COYOTE	Y N	Y N	Y N	Y N	Y N															IND.
220400000 RED FOX	Y N	Y N	Y N	Y N	Y N															IND.
220804000 RIVER OTTER	Y N	Y N	Y N	Y N	Y N															IND.
221200000 LYNX	Y N	Y N	Y N	Y N	Y N															IND.
221600000 MARTEN	Y N	Y N	Y N	Y N	Y N															IND.
222000000 MINK	Y N	Y N	Y N	Y N	Y N															IND.
222200000 WEASEL	Y N	Y N	Y N	Y N	Y N															IND.
223000000 WOLF	Y N	Y N	Y N	Y N	Y N															IND.
223200000 WOLVERINE	Y N	Y N	Y N	Y N	Y N															IND.
223400000	Y N	Y N	Y N	Y N	Y N															IND.
	Y N	Y N	Y N	Y N	Y N															IND.

During the last year, did your household use or try to harvest any other kind of small land mammals or furbearers?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

1 "LAST YEAR" means between January 1, 2015 and December 31, 2015.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

**SMALL LAND MAMMALS OR FURBEARERS: 14****YAKUTAT: 373**

**HARVEST SUMMARY: SMALL LAND ANIMALS**

HOUSEHOLD ID

If this household did NOT USE or HARVEST small land animals last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

**MAPPING***Refer to data collection maps and mapping instructions to map small land mammals...***ASSESSMENTS: SMALL LAND MAMMALS/FURBEARERS**

220000000

To conclude our small land mammals/furbearers section, I am going to ask a few general questions about small land mammals/furbearers.

**During the last year,<sup>1</sup>**

... did your household use LESS, SAME, or MORE small land mammals/furbearers than in recent years? ..... X L S M

IF LESS or MORE ...

X = do not use

WHY was your use different?

1

2

**During the last year,<sup>1</sup>**

...did your household GET ENOUGH small land mammals/furbearers?..... Y N

If NO...

What KIND of small land mammals/furbearers did you need?

How would you describe the impact to your household of not getting enough small land mammals/furbearers last year?

... not noticeable?

... minor ?

... major?

... Severe?

(0)

(1)

(2)

(3)

...did your household do anything DIFFERENTLY because you did not get enough small land mammals/furbearers?..... Y N

If YES...

What did your household do differently?

1

2

We would like to know your opinion about wild resources in Yakutat. Please indicate whether you agree or disagree with each statement I am going to read.

1. I would like to see more local participation in trapping.

**AGREE DISAGREE**

1

2. Wolves have a negative impact on local moose and deer populations.

**AGREE DISAGREE**

2

3. We welcome the expansion of local beaver populations.

**AGREE DISAGREE**

3

<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.

**HARVESTS: MARINE MAMMALS**

HOUSEHOLD ID

1. Do you or members of your household USUALLY hunt for marine mammals?..... Y N ☐
2. During the last year (between January 1, 2015 and December 31, 2015),  
did you, or members of your household USE or TRY TO HARVEST marine mammals?..... Y N ☐

IF the answer to QUESTION 2 is NO, to to the NEXT PAGE.

IF the answer is YES, continue on this page ...

During the last year,<sup>1</sup>

did you or members of your household...

- A ... use<sup>2</sup> \_\_\_\_\_?
- B ...receive \_\_\_\_\_ from another HH or community
- C ...give \_\_\_\_\_ to another HH or community?
- D ...try<sup>2</sup> to harvest \_\_\_\_\_?
- E ...actually harvest any \_\_\_\_\_?

if  
harvest  
is "yes"

Please estimate how many marine mammals ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested in ....

INCLUDE marine mammals that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below in blanks above	A	B	C	D	E
	USE	REC	GIVE	TRY	HAR

HARBOR SEAL

Y N Y N Y N Y N Y N

300806990

300806991

300806992

300806999

FUR SEAL

Y N Y N Y N Y N Y N

STELLER SEA LION

Y N Y N Y N Y N Y N

301200000

301200001

301200002

301200009

SEA OTTER

Y N Y N Y N Y N Y N

301000000

Y N Y N Y N Y N Y N

Y N Y N Y N Y N Y N

Y N Y N Y N Y N Y N

Y N Y N Y N Y N Y N

Y N Y N Y N Y N Y N

Y N Y N Y N Y N Y N

SEX	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS <sup>3</sup>
M/F	(specify amount harvested per month)													(specify)
M														IND
F														IND
UNK														IND
1														
2														
-9														

M														IND
F														IND
UNK														IND
1														
2														
-9														

During the last year, did your household use or try to harvest any other kind of Marine mammals?..... Y N ☐

IF YES, enter the name in a blank row above, and answer the questions in that row.

1 "LAST YEAR" means between January 1, 2015 and December 31, 2015.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

**MARINE MAMMALS: 12****YAKUTAT: 373**

**HARVEST SUMMARY: MARINE MAMMALS**

HOUSEHOLD ID

If this household did NOT USE or HARVEST marine mammals last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

**MAPPING***Refer to data collection maps and mapping instructions to map marine mammals...***ASSESSMENTS: MARINE MAMMALS**

300000000

To conclude our marine mammals section, I am going to ask a few general questions about marine mammals.

**During the last year,<sup>1</sup>**

... did your household use LESS, SAME, or MORE marine mammals than in recent years? ..... X L S M

IF LESS or MORE ...

X = do not use

WHY was your use different?

1

2

**During the last year,<sup>1</sup>**

... did your household GET ENOUGH marine mammals? ..... Y N

If NO...

What KIND of marine mammals did you need?

How would you describe the impact to your household of not getting enough marine mammals last year?

... not noticeable?

... minor ?

... major?

... Severe?

(0)

(1)

(2)

(3)

... did your household do anything DIFFERENTLY because you did not get enough marine mammals? ..... Y N

If YES...

What did your household do differently?

1

2

We would like to know your opinion about wild resources in Yakutat. Please indicate whether you agree or disagree with each statement I am going to read.

1. Cruise ships are causing harm to local harbor seal populations.

**AGREE DISAGREE**

1

2. The local beluga whale population is culturally important to the community of Yakutat.

**AGREE DISAGREE**

2

<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.



**HARVESTS: BIRDS**

HOUSEHOLD ID

1. Do you or members of your household USUALLY hunt for birds?..... Y N ☐
2. During the last year (between January 1, 2015 and December 31, 2015),  
did you, or members of your household USE or TRY TO HARVEST birds?..... Y N ☐

IF the answer to QUESTION 2 is NO, to to the *NEXT PAGE*.

IF the answer is YES, continue on this page ...

**During the last year,<sup>1</sup>****did you or members of your household...**

- A ... use<sup>2</sup> \_\_\_\_\_?
- B ...receive \_\_\_\_\_ from another HH or community
- C ...give \_\_\_\_\_ to another HH or community?
- D ...try<sup>2</sup> to harvest \_\_\_\_\_?
- E ...actually harvest any \_\_\_\_\_?

if  
harvest  
is "yes"

Please estimate how many birds ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested in ....

INCLUDE birds that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below in blanks above	A	B	C	D	E					
	USE	REC	GIVE	TRY	HAR	January February March April WINTER	May June JULY August September October November December FALL	Season of harvest unknown	UNITS <sup>3</sup>	
						(number killed in each season)			(number)	(specify)
GOLDENEYE	Y N	Y N	Y N	Y N	Y N					IND
410210990										
MALLARD	Y N	Y N	Y N	Y N	Y N					IND
410214000										
LONG-TAILED DUCK	Y N	Y N	Y N	Y N	Y N					IND
410218000										
NORTHERN PINTAIL	Y N	Y N	Y N	Y N	Y N					IND
410220000										
SCAUP	Y N	Y N	Y N	Y N	Y N					IND
410226990										
TEAL	Y N	Y N	Y N	Y N	Y N					IND
410232990										
WIGEON	Y N	Y N	Y N	Y N	Y N					IND
410236990										
OTHER DUCKS	Y N	Y N	Y N	Y N	Y N					IND
410299000										
CANADA GEESE	Y N	Y N	Y N	Y N	Y N					IND
410404990										
WHITE-FRONTED GEESE	Y N	Y N	Y N	Y N	Y N					IND
410410000										

...Continue on the next page

1 "LAST YEAR" means between January 1, 2015 and December 31, 2015.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

**BIRDS: 15**

**HARVESTS: BIRDS**

HOUSEHOLD ID

...continued from previous page

During the last year,<sup>1</sup>

did you or members of your household...

- A ... use<sup>2</sup> \_\_\_\_\_?
- B ...receive \_\_\_\_\_ from another HH or community
- C ...give \_\_\_\_\_ to another HH or community?
- D ...try<sup>2</sup> to harvest \_\_\_\_\_?
- E ...actually harvest any \_\_\_\_\_?

if  
harvest  
is "yes"

Please estimate how many birds ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested in ....

INCLUDE birds that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

E ...actually harvest any ____?											
	January										
	February										
	March										
	April										
	WINTER	SPRING	SUMMER	FALL	Season of harvest unknown	UNITS <sup>3</sup>					
Read names below in blanks above	A USE	B REC	C GIVE	D TRY	E HAR						
						(number killed in each season)	(number)	(specify)			

OTHER GEESE	Y	N	Y	N	Y	N	Y	N	Y	N			IND
410499000													
SWAN	Y	N	Y	N	Y	N	Y	N	Y	N			IND
410699000													
CRANE	Y	N	Y	N	Y	N	Y	N	Y	N			IND
410899000													
LOON	Y	N	Y	N	Y	N	Y	N	Y	N			IND
411216990													
GROUSE	Y	N	Y	N	Y	N	Y	N	Y	N			IND
421802990													
PTARMIGAN	Y	N	Y	N	Y	N	Y	N	Y	N			IND
421804990													
SEABIRDS (SPECIFY)	Y	N	Y	N	Y	N	Y	N	Y	N			IND
411299000													
BLACK OYSTERCATCHER	Y	N	Y	N	Y	N	Y	N	Y	N			IND
411004000													
SHOREBIRDS	Y	N	Y	N	Y	N	Y	N	Y	N			IND
411099000													
	Y	N	Y	N	Y	N	Y	N	Y	N			IND
	Y	N	Y	N	Y	N	Y	N	Y	N			IND

During the last year, did your household use or try to harvest any other kind of birds?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.<sup>2</sup> "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.<sup>3</sup> UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.**BIRDS: 15**

**HARVEST SUMMARY: BIRDS**

HOUSEHOLD ID

If this household did NOT USE or HARVEST birds last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

**MAPPING***Refer to data collection maps and mapping instructions to map birds and eggs...***ASSESSMENTS: BIRDS**

400000000

To conclude our birds section, I am going to ask a few general questions about birds .

**During the last year,<sup>1</sup>**

... did your household use LESS, SAME, or MORE birds than in recent years? ..... X L S M

IF LESS or MORE ...

X = do not use

WHY was your use different?

1

2

**During the last year,<sup>1</sup>**

...did your household GET ENOUGH birds ?..... Y N

If NO...

What KIND of birds did you need?

How would you describe the impact to your household of not getting enough birds last year?

... not noticeable?

... minor ?

... major?

... Severe?

(0)

(1)

(2)

(3)

...did your household do anything DIFFERENTLY because you did not get enough birds ?..... Y N

If YES...

What did your household do differently?

1

2

<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.

**HARVESTS: BIRD EGGS**HOUSEHOLD ID 1. Do you or members of your household USUALLY harvest bird eggs?..... Y N ☐2. During the last year (between January 1, 2015 and December 31, 2015),  
did you, or members of your household USE or TRY TO HARVEST bird eggs?..... Y N ☐

IF the answer to QUESTION 2 is NO, to to the NEXT PAGE.

IF the answer is YES, continue on this page ...

During the last year,<sup>1</sup>

did you or members of your household...

- A ... use<sup>2</sup> \_\_\_\_\_?
- B ... receive \_\_\_\_\_ from another HH or community
- C ... give \_\_\_\_\_ to another HH or community?
- D ... try<sup>2</sup> to harvest \_\_\_\_\_?
- E ... actually harvest any \_\_\_\_\_?

if  
harvest  
is "yes"

Please estimate how many bird eggs ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested with ....

INCLUDE bird eggs that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If harvesting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below in blanks above	A	B	C	D	E	AMOUNT (amt)	Units <sup>4</sup> specify	COMMENTS (text)
	USE	REC	GIVE	TRY	HAR			
MALLARD EGGS	Y N	Y N	Y N	Y N	Y N		IND	
430214000								
OTHER DUCK EGGS	Y N	Y N	Y N	Y N	Y N		IND	
430299000								
CANADA GEESE EGGS	Y N	Y N	Y N	Y N	Y N		IND	
430404990								
GLAUCOUS WINGED GULL EGGS	Y N	Y N	Y N	Y N	Y N		IND	
431212040								
TERN EGGS	Y N	Y N	Y N	Y N	Y N		IND	
431226990								
SEABIRD EGGS	Y N	Y N	Y N	Y N	Y N		IND	
431299000								
SWAN EGGS	Y N	Y N	Y N	Y N	Y N		IND	
430699000								
CRANE EGGS	Y N	Y N	Y N	Y N	Y N		IND	
430899000								
BLACK OYSTERCATCHER EGGS	Y N	Y N	Y N	Y N	Y N		IND	
431004000								
	Y N	Y N	Y N	Y N	Y N			

During the last year, did your household use or try to harvest any other kind of bird eggs?..... Y N ☐

IF YES, enter the name in a blank row above, and answer the questions in that row.

1 "LAST YEAR" means between January 1, 2015 and December 31, 2015.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

4 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

**HARVEST SUMMARY: BIRD EGGS**

HOUSEHOLD ID

If this household did NOT USE or HARVEST bird eggs last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

**MAPPING***Refer to data collection maps and mapping instructions to map birds and eggs...***ASSESSMENTS: BIRD EGGS**

43000000

To conclude our bird eggs section, I am going to ask a few general questions about bird eggs.

**During the last year,<sup>1</sup>**... did your household use LESS, SAME, or MORE bird eggs than in recent years? ..... X L S M ☐

IF LESS or MORE ...

X = do not use

WHY was your use different?

1 ☐2 ☐**During the last year,<sup>1</sup>**...did your household GET ENOUGH bird eggs?..... Y N ☐

If NO...

What KIND of bird eggs did you need?

☐

How would you describe the impact to your household of not getting enough bird eggs last year?

... not noticeable?

... minor ?

... major?

... Severe?

(0)

(1)

(2)

(3)

☐...did your household do anything DIFFERENTLY because you did not get enough bird eggs?..... Y N ☐

If YES...

What did your household do differently?

1 ☐2 ☐

We would like to know your opinion about wild resources in Yakutat. Please indicate whether you agree or disagree with each statement I am going to read.

1. My household has the knowledge to harvest bird eggs if we want to.

**AGREE DISAGREE**1 ☐<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.

**HARVESTS: PLANTS AND BERRIES (INCLUDING WOOD)**

HOUSEHOLD ID

1. Do you or members of your household USUALLY harvest plants and berries (including wood)?..... Y N

2. During the last year (between January 1, 2015 and December 31, 2015),  
did you, or members of your household USE or TRY TO HARVEST plants and berries (including wood)?..... Y N

IF the answer to QUESTION 2 is NO, to to the NEXT PAGE.

IF the answer is YES, continue on this page ...

During the last year,<sup>1</sup>

did you or members of your household...

- A ... use<sup>2</sup> \_\_\_\_\_ ?  
 B ...receive \_\_\_\_\_ from another HH or community  
 C ...give \_\_\_\_\_ to another HH or community?  
 D ...try<sup>2</sup> to harvest \_\_\_\_\_?  
 E ...actually harvest any \_\_\_\_\_?

if  
harvest  
is "yes"

Please estimate how many plants and berries (including wood) ALL MEMBERS OF YOUR HOUSEHOLD got during the last year.

INCLUDE plants and berries (including wood) that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If harvesting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below  
in blanks above

A	B	C	D	E
USE	REC	GIVE	TRY	HAR

AMOUNT	Units <sup>4</sup>	COMMENTS
(amt)	specify	(text)

BLUEBERRY	Y	N	Y	N	Y	N	Y	N	Y	N	GAL
601002000											
LOW BUSH CRANBERRY	Y	N	Y	N	Y	N	Y	N	Y	N	GAL
601004000											
HIGH BUSH CRANBERRY	Y	N	Y	N	Y	N	Y	N	Y	N	GAL
601006000											
ELDERBERRY	Y	N	Y	N	Y	N	Y	N	Y	N	GAL
601008000											
CURRENTS	Y	N	Y	N	Y	N	Y	N	Y	N	GAL
601012000											
HUCKLEBERRY	Y	N	Y	N	Y	N	Y	N	Y	N	GAL
601014000											
NAGOONBERRY	Y	N	Y	N	Y	N	Y	N	Y	N	GAL
601018000											
RASPBERRY	Y	N	Y	N	Y	N	Y	N	Y	N	GAL
601020000											
SALMONBERRY	Y	N	Y	N	Y	N	Y	N	Y	N	GAL
601022000											
SOAPBERRY	Y	N	Y	N	Y	N	Y	N	Y	N	GAL
601024000											

...Continue on the next page

1 "LAST YEAR" means between January 1, 2015 and December 31, 2015.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

4 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

**PLANTS AND BERRIES (INCLUDING WOOD): 17****YAKUTAT: 373**

**HARVESTS: PLANTS AND BERRIES (INCLUDING WOOD)**

HOUSEHOLD ID

...continued from previous page

During the last year,<sup>1</sup>

did you or members of your household...

- A ... use<sup>2</sup> \_\_\_\_\_?
- B ... receive \_\_\_\_\_ from another HH or community
- C ... give \_\_\_\_\_ to another HH or community?
- D ... try<sup>2</sup> to harvest \_\_\_\_\_?
- E ... actually harvest any \_\_\_\_\_?

if harve  
is "yes"

Please estimate how many plants and berries (including wood) ALL MEMBERS OF YOUR HOUSEHOLD got for subsistence uses during the last year. How many were harvested with ....

INCLUDE plants and berries (including wood) that members of this household gave away, are fresh, fed to dogs, lost to spoilage, or got by helping others. If harvesting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below in blanks above	A USE	B REC	C GIVE	D TRY	E HAR	AMOUNT (amt)	Units <sup>4</sup> specify	COMMENTS (text)
DOGWOOD BERRY (BUNCHBERRY)	Y N	Y N	Y N	Y N	Y N		GAL.	
601031000								
OTHER WILD BERRY	Y N	Y N	Y N	Y N	Y N		GAL.	
601099000								
BEACH ASPARAGUS	Y N	Y N	Y N	Y N	Y N		GAL.	
602002000								
GOOSE TONGUE	Y N	Y N	Y N	Y N	Y N		GAL.	
602004000								
WILD RHUBARB	Y N	Y N	Y N	Y N	Y N		GAL.	
602006000								
DEVILS CLUB	Y N	Y N	Y N	Y N	Y N		GAL.	
602012000								
FIDDLEHEAD FERNS	Y N	Y N	Y N	Y N	Y N		GAL	
602014000								
NETTLE	Y N	Y N	Y N	Y N	Y N		GAL	
602016000								
HUDSON BAY TEA	Y N	Y N	Y N	Y N	Y N		GAL	
602018000								
INDIAN RICE	Y N	Y N	Y N	Y N	Y N		GAL	
602020000								
MINT	Y N	Y N	Y N	Y N	Y N		GAL	
602022000								

...Continue on the next page

1 "LAST YEAR" means between January 1, 2015 and December 31, 2015.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

4 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

**PLANTS AND BERRIES (INCLUDING WOOD): 17****YAKUTAT: 373**



**HARVESTS: PLANTS AND BERRIES (INCLUDING WOOD)**

HOUSEHOLD ID

...continued from previous page

During the last year,<sup>1</sup>

did you or members of your household...

- A ... use<sup>2</sup> \_\_\_\_\_?
- B ... receive \_\_\_\_\_ from another HH or community
- C ... give \_\_\_\_\_ to another HH or community?
- D ... try<sup>2</sup> to harvest \_\_\_\_\_?
- E ... actually harvest any \_\_\_\_\_?

if harve  
is "yes"

Read names below in blanks above	A	B	C	D	E
	USE	REC	GIVE	TRY	HAR

SALMONBERRY SHOOTS Y N Y N Y N Y N Y N

602024000

SOURDOCK Y N Y N Y N Y N Y N

602028000

SPRUCE TIPS Y N Y N Y N Y N Y N

602030000

WILD CELERY Y N Y N Y N Y N Y N

(YANNA.EIT)

602032000

FIREWEED Y N Y N Y N Y N Y N

602042000

OTHER WILD GREENS Y N Y N Y N Y N Y N

602038000

MUSHROOMS Y N Y N Y N Y N Y N

602040000

Y N Y N Y N Y N Y N

FIREWOOD Y N Y N Y N Y N Y N

604000000

Please estimate how many plants and berries (including wood) ALL MEMBERS OF YOUR HOUSEHOLD got for subsistence uses during the last year. How many were harvested with ....

INCLUDE plants and berries (including wood) that members of this household gave away, are fresh, fed to dogs, lost to spoilage, or got by helping others. If harvesting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

AMOUNT	Units <sup>4</sup>	COMMENTS
(amt)	specify	(text)

GAL

GAL

GAL

GAL

GAL

GAL

GAL

GAL

Include ALL plants and berries HARVESTED by members of this household in 2015

Please estimate the percentage of your household's heating needs in 2015 that came from firewood.

0% 1% - 25% 26% - 50% 51% - 75% 76% - 99% 100%

(0) (1) (2) (3) (4) (5)

(circle one)

During the last year, did your household use or try to harvest any other kind of Plants and berries?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.<sup>2</sup> "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.<sup>4</sup> UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.**PLANTS AND BERRIES (INCLUDING WOOD): 17****YAKUTAT: 373**

**HARVEST SUMMARY: PLANTS AND BERRIES**

HOUSEHOLD ID

If this household did NOT USE or HARVEST plants and berries last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

**MAPPING***Refer to data collection maps and mapping instructions to map plants, berries, and wood...***ASSESSMENTS: PLANTS AND BERRIES (INCLUDING WOOD)**

600000000

To conclude our plants and berries (including wood) section, I am going to ask a few general questions about plants and berries (including wood).

**During the last year,<sup>1</sup>**

... did your household use LESS, SAME, or MORE plants and berries (including wood) than in recent years? ..... X L S M ☐

IF LESS or MORE ...

X = do not use

WHY was your use different?

1

2

**During the last year,<sup>1</sup>**

...did your household GET ENOUGH plants and berries (including wood)?..... Y N ☐

If NO...

What KIND of plants and berries (including wood) did you need?

How would you describe the impact to your household of not getting enough plants and berries (including wood) last year?

... not noticeable?

... minor ?

... major?

... Severe?

(0)

(1)

(2)

(3)

...did your household do anything DIFFERENTLY because you did not get enough plants and berries (including wood)?..... Y N ☐

If YES...

What did your household do differently?

1

2

We would like to know your opinion about wild resources in Yakutat. Please indicate whether you agree or disagree with each statement I am going to read.

1. I have noticed local forests advancing into new areas near Yakutat.

**AGREE DISAGREE**

1

<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.

**HARVESTS: SEAWEED**

HOUSEHOLD ID

1. Do you or members of your household USUALLY harvest seaweed?.....

Y N

2. During the last year (between January 1, 2015 and December 31, 2015),

did you, or members of your household USE or TRY TO HARVEST seaweed?.....

Y N

IF the answer to QUESTION 2 is NO, to to the NEXT PAGE.

IF the answer is YES, continue on this page ...

During the last year,<sup>1</sup>

did you or members of your household...

A ... use<sup>2</sup> \_\_\_\_\_?

B ...receive \_\_\_\_\_ from another HH or community

C ...give \_\_\_\_\_ to another HH or community?

D ...try<sup>2</sup> to harvest \_\_\_\_\_?

E ...actually harvest any \_\_\_\_\_?

if  
harvest  
is "yes"

Please estimate how many seaweed ALL MEMBERS OF YOUR HOUSEHOLD got during the last year.

INCLUDE seaweed that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If harvesting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below  
in blanks above

	A	B	C	D	E
	USE	REC	GIVE	TRY	HAR

AMOUNT	Units <sup>4</sup>	COMMENTS
(amt)	specify	(text)

BLACK SEAWEED

Y N Y N Y N Y N Y N

GAL

603002000

BULL KELP

Y N Y N Y N Y N Y N

GAL

603004000

RED SEAWEED

Y N Y N Y N Y N Y N

GAL

603006000

SEA RIBBONS

Y N Y N Y N Y N Y N

GAL

603008000

GIANT KELP  
(MACROCYSTIS)

Y N Y N Y N Y N Y N

GAL

603010000

ALARIA

Y N Y N Y N Y N Y N

GAL

603012000

SEAWEED/KELP  
(USED FOR FERTILIZER)

Y N Y N Y N Y N Y N

GAL

603090000

Y N Y N Y N Y N Y N

GAL

Y N Y N Y N Y N Y N

GAL

Y N Y N Y N Y N Y N

GAL

During the last year, did your household use or try to harvest any other kind of seaweed?..... Y N

1 "LAST YEAR" means between January 1, 2015 and December 31, 2015.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

4 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

**SEAWEED: 17****YAKUTAT: 373**

**HARVEST SUMMARY: SEAWEED**

HOUSEHOLD ID

If this household did NOT USE or HARVEST seaweed last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

**MAPPING***Refer to data collection maps and mapping instructions to map seaweed...***ASSESSMENTS: SEAWEED**

600000000

To conclude our seaweed section, I am going to ask a few general questions about seaweed.

**During the last year,<sup>1</sup>**... did your household use LESS, SAME, or MORE seaweed than in recent years? ..... X L S M ☐

IF LESS or MORE ...

X = do not use

WHY was your use different?

1 ☐2 ☐**During the last year,<sup>1</sup>**...did your household GET ENOUGH seaweed?..... Y N ☐

If NO...

What KIND of seaweed did you need?

How would you describe the impact to your household of not getting enough seaweed last year?

... not noticeable? ... minor ? ... major? ... Severe?

(0) (1) (2) (3)

...did your household do anything DIFFERENTLY because you did not get enough seaweed?..... Y N ☐

If YES...

What did your household do differently?

1 ☐2 ☐<sup>1</sup> "LAST YEAR" means between January 1, 2015 and December 31, 2015.

**HARVEST SUMMARY: ALL RESOURCES**

HOUSEHOLD ID

**ASSESSMENTS: ALL RESOURCES**

0

To conclude our harvests section, I am going to ask a few general questions about wild resources.

**During the last year,<sup>1</sup>**

... did your household use *LESS, SAME, or MORE* wild resources than in recent years? ..... X L S M ☐

IF LESS or MORE ...

X = do not use

WHY was your use different?

1

2

**During the last year,<sup>1</sup>**

...did your household GET ENOUGH wild resources?..... Y N ☐

If NO...

What KIND of wild resources did you need?

How would you describe the impact to your household of not getting enough wild resources last year? ..... *... not noticeable?* *... minor ?* *... major?* *... Severe?*  
(0) (1) (2) (3)

...did your household do anything DIFFERENTLY because you did not get enough ?..... Y N ☐

If YES...

What did your household do differently?

1

2

We would like to know your opinion about wild resources in Yakutat. Please indicate whether you agree or disagree with each statement I am going to read.

1. I am concerned about the possibility of Russell Fjord flooding the Situk River.

**AGREE DISAGREE**

1

2. My household would find a way to subsist if salmon failed to return to Yakutat.

**AGREE DISAGREE**

2

3. I am concerned about the growth of tourism in Yakutat.

**AGREE DISAGREE**

3

4. Charter fishing is important to the economy of Yakutat.

**AGREE DISAGREE**

4

5. Guided hunting is important to the economy of Yakutat.

**AGREE DISAGREE**

5

6. Climate change is causing alarming changes to the landscapes near Yakutat.

**AGREE DISAGREE**

6

7. Yakutat is a resilient community that can weather environmental change.

**AGREE DISAGREE**

7

8. Yakutat is a resilient community that can weather economic change.

**AGREE DISAGREE**

8

9. I have noticed a decline in local frog populations throughout my lifetime.

**AGREE DISAGREE**

9

1 "LAST YEAR" means between January 1, 2015 and December 31, 2015.

2 For "OTHER FOODS", we are not interested in condiments or staples, such as sugar, flour, coffee, or butter etc... We are interested in foods used in place of traditional foods for meals or snacks. This includes foods substituted by personal preference or out of necessity (traditional food not available).

# **ADDITIONAL ASSESSMENTS**

HOUSEHOLD ID

## **EXPENSES**

How much do you spend annually to heat your home?

\$

How much do you spend monthly on groceries?

\$

## **HANDICRAFTS**

Between January 1, 2015 and December 31, 2015... did members of your household participate in the making of handicrafts using locally harvested or collected natural materials?

Y N

If yes, which of the following?

	circle			circle			circle one or both	
birchbark	Y	N		horns/antlers	Y	N	collect / harvest	
diamond willow	Y	N		bones	Y	N	collect / harvest	
grass	Y	N		bear claws	Y	N	collect / harvest	
spruce roots	Y	N		animal hides	Y	N	collect / harvest	
other (specify)	Y	N		fish skin	Y	N	collect / harvest	
	collect / harvest			baleen	Y	N	collect / harvest	
				ivory	Y	N	collect / harvest	

Did members of your household sell the handicrafts that were made from the locally harvested or collected natural materials?

Y N

Comments/Explanations

## **SALMON**

Last year, did your household get a subsistence salmon permit?.....

Y N

**If YES** ...how many members of your household were listed on the permit? (# HH Members)

...Were there other people outside of your household listed on the permit?.....

Y N

**If YES** ...how many people besides those in your household were listed on the permit? (# outside HH)

**If NO** ...were you listed on another household's permit?

Y N

## **COMMUNITY AND ECONOMY**

In your opinion, what is the most important reason you continue to live in Yakutat?

What is the biggest challenge to living in Yakutat?

**FOOD SECURITY**

HOUSEHOLD ID

The questions on this page have been asked all over the United States to find out if Americans have enough to eat. We would like to know if people in your community have enough to eat. I'd like you to think about all your household's food, both wild food and store-bought...

Which of these three statements best describes the food eaten in your household in the last 12 months...

**STATEMENT 1.** We had enough of the kinds of food we wanted to eat.....

**STATEMENT 2.** We had enough food, but not always the KIND of food we wanted to eat.....

**STATEMENT 3.** Sometimes, or often, we did **NOT HAVE ENOUGH** food to eat.....

(Circle one)

1 2 3

HH1 C

If 2 or 3

Now I am going to read you several statements about different food situations.

Please tell me whether EACH statement was true for your household (HH) in the last 12 months.

**STATEMENT 4. We WORRIED that our household would run out of food before we could get more.**

HH2

In the last 12 months, was this ever true for your household?..... N Y ?

If YES...

...in which months did this happen?..... J F M A M J J A S O N D

...did this happen because your household couldn't get WILD FOOD,

your HH couldn't get STORE-BOUGHT food, or your HH couldn't get BOTH KINDS of food?..... WILD STOR BOTH

**STATEMENT 5. We could not get the kinds of foods we wanted to eat because of a LACK OF RESOURCES.**

HH4

By "lack of resources," we mean your household did NOT have what you needed to hunt, fish, gather, OR did not have enough money to buy food.

In the last 12 months, was this ever true for your household?..... N Y ?

If YES...

...in which months did this happen?..... J F M A M J J A S O N D

...did this happen because your household couldn't get WILD FOOD,

your HH couldn't get STORE-BOUGHT food, or your HH couldn't get BOTH KINDS of food?..... WILD STOR BOTH

**STATEMENT 6. The food we had JUST DID NOT LAST, and we could not get more.**

HH3

In the last 12 months, was this ever true for your household?..... N Y ?

If YES...

...in which months did this happen?..... J F M A M J J A S O N D

Now, think just about your household's WILD FOOD...

**STATEMENT 7. The WILD food we had JUST DID NOT LAST, and we could not get more.**

In the last 12 months, was this ever true for your household?..... N Y ?

If YES...

...in which months did this happen?..... J F M A M J J A S O N D

Now, think just about your household's STORE-BOUGHT food...

**STATEMENT 8. The STORE-BOUGHT food we had JUST DID NOT LAST, and we could not get more.**

In the last 12 months, was this ever true for your household?..... N Y ?

If YES...

...in which months did this happen?..... J F M A M J J A S O N D

If any ONE of the STATEMENTS 4, 5, OR 6 was "YES," continue with food security questions on next page. Otherwise, go to next section...



**FOOD SECURITY**

HOUSEHOLD ID

*If any ONE of the STATEMENTS 4, 5, or 6 on previous page was "YES," continue with food security questions below. Otherwise, go to next section...*

In the past 12 months, did you or other adults in your household ever CUT THE SIZE OF YOUR MEALS OR SKIP MEALS because the HH could not get the food that was needed? ..... N Y ? ☐ AD1

If YES...

...in which months did this happen?..... J F M A M J J A S O N D  
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

In the last 12 months, did you or other adults in your household ever EAT LESS THAN YOU FELT YOU SHOULD because the HH could not get the food that was needed?..... N Y ? ☐ AD2

In the last 12 months, were adults in the HH ever go HUNGRY BUT DID NOT EAT because there was not enough food?..... N Y ? ☐ AD3

In the last 12 months, did adults in the HH LOSE WEIGHT because there was not enough food?..... N Y ? ☐ AD4

In the last 12 months, did adults in the HH ever NOT EAT FOR A WHOLE DAY because there was not enough food?..... N Y ? ☐ AD5

If YES...

...in which months did this happen?..... J F M A M J J A S O N D  
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

**EMPLOYMENT**

HOUSEHOLD ID

The next few pages ask about jobs and income. We ask about these things because we are trying to understand all parts of the community economy. Many people use wages from jobs to support hunting, fishing, and gathering activities.

Between January 1, 2015 and December 31, 2015 ...

...Did any members of your household earn money from a JOB or from SELF EMPLOYMENT?..... Y N

Starting with the first head of your household, what job or jobs did he or she have last year?

For each member of this household born before 2000, list EACH JOB held last year. For household members who did not have a job, write: RETIRED, UNEMPLOYED, STUDENT, HOMEMAKER, DISABLED, etc..

INCLUDE EACH PERSON 16 YEARS AND OLDER EVEN IF THEY DID NOT HAVE A JOB				WORK SCHEDULE <sup>2</sup>					In the past year how much did he or she earn in this job?	
Person code from page 2	What kind of work did he or she do in this job?	For whom did he or she work in this job?	In the past year, what months did he or she work in this job?	FULL TIME	PART TIME	SHIFT - FULL TIME	ON-CALL, VARIES	SHIFT - PART TIME		
(ID #)	(job title <sup>1</sup> )	(employer)	(circle each month worked)	(circle one)					gross income <sup>3</sup>	
1ST JOB				J F M A M J J A S O N D	FT	PT	SF	OC	SP	\$ / YR
1	6 910100000	SOC:	SIC:							schedule:
2ND JOB				J F M A M J J A S O N D	FT	PT	SF	OC	SP	\$ / YR
2	6 910100000	SOC:	SIC:							schedule:
3RD JOB				J F M A M J J A S O N D	FT	PT	SF	OC	SP	\$ / YR
3	6 910100000	SOC:	SIC:							schedule:
4TH JOB				J F M A M J J A S O N D	FT	PT	SF	OC	SP	\$ / YR
4	6 910100000	SOC:	SIC:							schedule:
5TH JOB				J F M A M J J A S O N D	FT	PT	SF	OC	SP	\$ / YR
5	6 910100000	SOC:	SIC:							schedule:
6TH JOB				J F M A M J J A S O N D	FT	PT	SF	OC	SP	\$ / YR
6	6 910100000	SOC:	SIC:							schedule:
7TH JOB				J F M A M J J A S O N D	FT	PT	SF	OC	SP	\$ / YR
7	6 910100000	SOC:	SIC:							schedule:
8TH JOB				J F M A M J J A S O N D	FT	PT	SF	OC	SP	\$ / YR
8	6 910100000	SOC:	SIC:							schedule:
9TH JOB				J F M A M J J A S O N D	FT	PT	SF	OC	SP	\$ / YR
9	6 910100000	SOC:	SIC:							schedule:
10TH JOB				J F M A M J J A S O N D	FT	PT	SF	OC	SP	\$ / YR
10	6 910100000	SOC:	SIC:							schedule:

If a person FISHES COMMERCIALY or is otherwise SELF-EMPLOYED, list that as a separate job. For job title, enter COMMERCIAL FISHER, TRAPPER, CARVER, SEWER, BAKER, etc. Work schedule usually will be ON CALL. For gross income from self-employment, enter revenue MINUS expenses.

If a person does not earn money from any kind of work, enter RETIRED, UNEMPLOYED, DISABLED, STUDENT, or HOMEMAKER or other appropriate description as the job title.

Leave employer, months worked, schedule, and gross income blank.

**WORK SCHEDULE**  
**FT** - Fulltime (35+ hr/wk)  
**PT** - Parttime (<35 hr/wk)  
**SF** - Shift (2wks on/2wks off, etc.)  
**SP** - Shift - part time  
**OC** - Irregular, on call  
**--** - Unemployed

**GROSS INCOME** is the same as **TAXABLE INCOME** on a W-2 form. Self-employment, enter revenue - expense

**OTHER INCOME**

HOUSEHOLD ID

Between January 1, 2015 and December 31, 2015 ...

...Did any members of your household receive a dividend from the Permanent Fund or a native corporation?..... Y N

IF NO, go to the next section on this page

IF YES, continue below...

		Did anyone in your household receive income from	TOTAL amount all members of your household received from	
		in 2015	2015	
		(circle one)	(dollars)	
DIVIDENDS	ALASKA PERMANENT FUND DIVIDEND	Y N	\$	/ YR
	32			
	NATIVE CORPORATION DIVIDENDS	Y N	\$	/ YR
	13			

Alaska PFD IN 2015	Regional corporations	Dividend
1 PFD = \$2,072	Sealaska (# of dividends)	
2 PFDs = \$4,144		
3 PFDs = \$6,216		
4 PFDs = \$8,288		
5 PFDs = \$10,360		
6 PFDs = \$12,432	Village Corporation(s)	Dividend
7 PFDs = \$14,504	Yak-tat kwaan	\$2.45
8 PFDs = \$16,576		
9 PFDs = \$18,648		
10 PFDs = \$20,720		
11 PFDs = \$22,792		

Between January 1, 2015 and December 31, 2015 ...

...Did any members of your household receive OTHER income such as SENIOR BENEFITS or UNEMPLOYMENT?..... Y N

IF NO, go to the next section on this page

IF YES, continue below...

		Received?	Total amount?	
		(circle one)	(dollars)	
EMPLOYMENT RELATED	UNEMPLOYMENT	Y N	\$	/ YR
	12			
	WORKERS' COMP	Y N	\$	/ YR
	8			
	SOCIAL SECURITY	Y N	\$	/ YR
	7			
	PENSION & RETIREMENT	Y N	\$	/ YR
	5			
	DISABILITY	Y N	\$	/ YR
	31			
ENTITLEMENTS	VETERANS ASSISTANCE	Y N	\$	/ YR
	35			
	FOOD STAMPS (QUEST CARD)	Y N	\$	/ YR
	11			
STATE BENEFITS	ADULT PUBLIC ASSISTANCE	Y N	\$	/ YR
	3			
	SUPPLEMENTAL SECURITY INCOME (SSI)	Y N	\$	/ YR
	10			
FAMILY & CHILD	ENERGY ASSISTANCE	Y N	\$	/ YR
	9			
	ALASKA SENIOR BENEFITS (LONGEVITY)	Y N	\$	/ YR
	6			

		Received?	Total amount?	
		(circle one)	(dollars)	
FAMILY & CHILD	TANF (say "tanif", used to be AFDC)	Y N	\$	/ YR
	2			
	CHILD SUPPORT	Y N	\$	/ YR
	15			
	FOSTER CARE	Y N	\$	/ YR
	41			
	FUEL VOUCHERS	Y N	\$	/ YR
	49			
	MEETING HONORARIA (not per diem*)	Y N	\$	/ YR
	50			
OTHER	OTHER (describe)	Y N	\$	/ YR
	OTHER (describe)	Y N	\$	/ YR

\* per diem covers travel expenses, and is not counted as income.

Scratch paper for calculations

for \_\_\_\_\_ weeks =

for \_\_\_\_\_ weeks =

for \_\_\_\_\_ weeks =

for \_\_\_\_\_ weeks =

Senior Benefits of \$125 per month for 12 months = \$1,500 per elder

Senior Benefits of \$175 per month for 12 months = \$2,100 per elder

Senior Benefits of \$250 per month for 12 months = \$3,000 per elder

[illegible]

**DON'T FORGET TO FILL IN THE STOP TIME**

This image shows a blank sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

## **APPENDIX C–KEY RESPONDENT INTERVIEW PROTOCOL**

## **Social and Ecological Resilience in Yakutat**

### **Key Respondent Interview Questions**

***Alaska Department of Fish and Game, Division of Subsistence***

***National Park Service – Wrangell St. Elias National Park***

***Funding – NPRB***

***2016***

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Name: \_\_\_\_\_ Birthplace: \_\_\_\_\_  
Community of Residence: \_\_\_\_\_ Birth date: \_\_\_\_\_

Personal background

Subsistence general questions

- Where do you usually fish/hunt?
- How do you access hunting and fishing, berrying? Has this changed?
- Are there other areas you use only on occasion, or have used in the past and do not use any more? If so please list the locations here and indicate where they are on the map.
- Describe your subsistence round now and when you were a kid/your parents/you first moved to Yakutat
- What are the most important species harvested for yourself or in the community (currently)?
- Do you barter/trade? Why or why not? With who? For what? For how long?
- 

**History:**

- Please describe how subsistence salmon harvesting was in the past.
- Have the runs changed over time? If so, how?
- Is the quality of fish different?
- Has the number of people subsistence fishing changed over the years? If so, how has this affected your practices?
- Has the number of salmon you harvest changed from previous years?
- Have you been consistent in the amount of fishing you've done over time?
- Does your employment effect how often you are able to subsistence fish and your productivity?
- Do you face any difficulty acquiring your target number of fish? Does the younger generation help with the fishing? Are salmon abundant and accessible?)
- Do you feel that the climate is changing and if so, do you notice differences in the resources? Explain. (Summers/winters, break up/freeze up, growing seasons/vegetation, glaciers)
- Tourism - What has been the effect of increased tourism on Yakutat/your subsistence harvesting?

- Are there areas that elders in your village, or your ancestors, used for subsistence salmon fishing that are no longer being used? If so, why do you think this is? Also, please describe where these locations are and mark them on the map?
- Do you know what gear was used in the past to catch salmon around Yakutat? If so, what gear was used?

#### **Regulations:**

- Describe what you know of the subsistence fishing regulations and your perceptions of the subsistence fisheries' management.
- Are any particular regulations affecting your subsistence practices? If yes, please explain which ones and why.
- Do you have any recommendations for regulatory change or management?
- Do you have any questions or comments?

#### **Resilience/Adaptation**

- What are the most prominent changes in Yakutat residents' subsistence practices you have observed during your time in the community/ over your lifetime?
- Do you remember a time when salmon/goat/moose populations were very low? How did you/your family respond? How about the community of Yakutat?
- What are the 3 most important factors that enable your household's continued participation in subsistence activities?
- In your view, what are the 3 biggest challenges for Yakutat residents to continue their active participation in subsistence activities in the future?
- Are you as a household doing anything differently to prepare for these challenges? How about Yakutat as a community?
- How have local, state, and federal regulations pertaining to wild food harvest impacted Yakutat residents throughout your lifetime?
- What are the 3 biggest cultural challenges facing the community of Yakutat, especially as they pertain to relationship with wild resources?
- In your opinion, what kind of actions by management agencies regulating wild resource harvest opportunities would assist the community of Yakutat to maintain their cultural subsistence practices for future generations?



## **For intro KRIs**

Describe your subsistence round when you were a kid/your parents

Describe your subsistence round today

What are the most important species harvested for yourself or in the community (currently)?

How do you access hunting and fishing, berrying? Has this changed?

Do you barter/trade? Why or why not? With who? For what? For how long?

Resources – general. Population trends, importance,

Fish – salmon, halibut, herring, hooligan, steelhead

Game – moose, deer, bears, goats

Marine mammals – seals, sea lions, otters, whales

Shellfish

Nongame – new species, frogs, insects, songbirds, rodents, etc.

Climate - Have you noticed changes in local climate patterns throughout your lifetime?

Summers, winters

Break up, freeze up

Growing seasons/vegetation

Glaciers

Tourism - What has been the effect of increased tourism on Yakutat/your subsistence harvesting?

Regulations - concerning hunting and fishing? Major problems?

Culture – what's changed in your lifetime? What are some of the challenges, especially as pertains to subsistence?

## **APPENDIX D—CONVERSION FACTORS**

The following table presents the conversion factors used in determining how many pounds were harvested of each resource surveyed. For instance, if respondents reported harvesting 3 qt of smelt, the quantity would be multiplied by the appropriate conversion factor (in this case 1.5) to show a harvest of 4.5 lb of smelt.

Resource name	Reported units	Conversion factor
Chum salmon	Individual	6.2604
Chum salmon [CF retention]	Individual	6.2604
Coho salmon	Individual	4.4100
Coho salmon [CF retention]	Individual	4.4100
Chinook salmon	Individual	7.2432
Chinook salmon [CF retention]	Individual	7.2432
Pink salmon	Individual	2.8032
Pink salmon [CF retention]	Individual	2.8032
Sockeye salmon	Individual	3.2264
Sockeye salmon [CF retention]	Individual	3.2264
Unknown salmon	Individual	3.9309
Unknown salmon [CF retention]	Individual	3.9309
Pacific herring	Individual	0.4000
Pacific herring	Pounds	1.0000
Pacific herring	Gallons	6.0000
Pacific herring roe/unspecified	Gallons	7.0000
Pacific herring spawn on kelp	Pounds	1.0000
Pacific herring spawn on kelp	Gallons	7.0000
Pacific herring spawn on kelp [CF retention]	Gallons	7.0000
Pacific herring roe on hair seaweed	Pounds	1.0000
Pacific herring roe on hair seaweed	Gallons	7.0000
Pacific herring roe on hemlock branches	Pounds	1.0000
Pacific herring roe on hemlock branches	Gallons	3.9400
Pacific herring roe on hemlock branches	Quarts	0.9850
Eulachon (hooligan, candlefish)	Individual	0.2500
Eulachon (hooligan, candlefish)	Pounds	1.0000
Eulachon (hooligan, candlefish)	5 Gallons	30.0000
Eulachon (hooligan, candlefish)	Gallons	6.0000
Silver smelt	Gallons	9.0000
Pacific (gray) cod	Individual	3.2000
Pacific (gray) cod [CF retention]	Individual	3.2000
Pacific tomcod	Individual	0.5000
Unknown flounder	Individual	3.0000
Unknown flounder [CF retention]	Pounds	1.0000
Unknown flounder [CF retention]	Individual	3.0000
Lingcod	Individual	4.0000
Lingcod [CF retention]	Individual	4.0000
Rock greenling	Pounds	1.0000
Rock greenling	Individual	1.0000
Pacific halibut	Individual	21.1000
Pacific halibut	Pounds	1.0000
Pacific halibut [CF retention]	Pounds	1.0000
Pacific halibut [CF retention]	Individual	21.1000

-continued-

Appendix D.–Page 2 of 7.

Resource name	Reported units	Conversion factor
Black rockfish	Individual	1.5000
Black rockfish [CF retention]	Individual	1.5000
Yelloweye rockfish	Pounds	1.0000
Yelloweye rockfish	Individual	3.0000
Yelloweye rockfish [CF retention]	Pounds	1.0000
Yelloweye rockfish [CF retention]	Individual	3.0000
Dusky rockfish	Individual	1.0000
Copper rockfish	Individual	4.0000
China rockfish	Individual	1.0000
Unknown rockfish	Individual	1.8405
Sablefish (black cod)	Individual	3.1000
Sablefish (black cod) [CF retention]	Pounds	1.0000
Sablefish (black cod) [CF retention]	Individual	3.1000
Red Irish lord	Individual	0.5000
Unknown sculpin	Individual	0.5000
Dogfish	Individual	9.0000
Skates	Individual	5.0000
Unknown sole	Individual	1.0000
Brook trout	Individual	1.4000
Dolly Varden–saltwater [CF retention]	Individual	1.4000
Dolly Varden–unknown	Individual	1.4000
Dolly Varden–unknown [CF retention]	Individual	1.4000
Arctic grayling	Individual	0.7000
Cutthroat trout	Individual	1.4000
Cutthroat trout [CF retention]	Individual	1.4000
Rainbow trout	Individual	1.4000
Steelhead	Individual	1.4000
Steelhead [CF retention]	Individual	1.4000
Bison	Individual	450.0000
Black bear	Individual	58.0000
Brown bear	Individual	141.0000
Caribou	Individual	150.0000
Deer	Individual	43.2000
Mountain goat	Individual	72.5000
Moose	Individual	540.0000
Dall sheep	Individual	104.0000
Beaver	Individual	8.7500
Coyote	Individual	0.0000
Red fox	Individual	0.0000
Snowshoe hare	Individual	2.0000
North American river (land) otter	Individual	0.0000
Lynx	Individual	4.0000
Marmot	Individual	0.0000
Marten	Individual	0.0000
Mink	Individual	0.0000
Muskrat	Individual	0.7500

-continued-

Appendix D.–Page 3 of 7.

Resource name	Reported units	Conversion factor
Porcupine	Individual	8.0000
Red (tree) squirrel	Individual	0.5000
Weasel	Individual	0.0000
Gray wolf	Individual	0.0000
Wolverine	Individual	0.0000
Fur seal	Individual	15.0000
Harbor seal	Individual	56.0000
Unknown seal oil	Pounds	0.0000
Unknown seal oil	Gallons	0.0000
Sea otter	Individual	0.0000
Steller sea lion	Individual	200.0000
Unknown whale	Individual	0.0000
Canvasback	Individual	1.7000
Unknown goldeneye	Individual	1.3000
Mallard	Individual	1.6000
Long-tailed duck	Individual	1.2000
Northern pintail	Individual	1.2000
Unknown scaup	Individual	1.4000
Unknown teal	Individual	0.5000
Unknown wigeon	Individual	1.1000
Unknown ducks	Individual	0.9329
Dusky Canada goose	Individual	4.2000
Unknown Canada/cackling geese	Individual	2.8000
Snow goose	Individual	2.8000
White-fronted goose	Individual	2.9000
Unknown geese	Individual	0.3528
Unknown swans	Individual	11.0000
Sandhill crane	Individual	5.3000
Unknown crane	Individual	5.4000
Common snipe	Individual	0.0300
Black oystercatcher	Individual	0.8000
Unknown shorebirds	Individual	0.0200
Unknown loon	Individual	3.6000
Unknown grouse	Individual	0.9000
Unknown ptarmigan	Individual	0.8000
Unknown other birds	Individual	0.4258
Mallard eggs	Individual	0.1200
Unknown duck eggs	Individual	0.1500
Unknown Canada/cackling goose eggs	Individual	0.2500
Unknown swan eggs	Individual	0.6300
Unknown crane eggs	Individual	0.3300
Black oystercatcher eggs	Individual	0.1000
Glaucous-winged gull eggs	Individual	0.2000
Unknown gull eggs	Individual	0.3000
Unknown tern eggs	Individual	0.0500
Unknown eggs	Individual	0.1800

-continued-

Appendix D.–Page 4 of 7.

Resource name	Reported units	Conversion factor
Abalone	Gallons	2.1000
Abalone	Individual	0.0000
Red (large) chitons	Individual	0.5000
Red (large) chitons	Gallons	3.0000
Black (small) chitons	Pounds	1.0000
Black (small) chitons	Gallons	4.0000
Black (small) chitons	Quarts	1.0000
Black (small) chitons	Individual	0.0310
Butter clams	5 Gallons	15.0000
Butter clams	Gallons	3.0000
Butter clams	Quarts	0.7500
Butter clams	Individual	0.1200
Horse clams	Individual	3.0000
Horse clams	Gallons	4.4500
Pacific littleneck clams (steamers)	5 Gallons	15.0000
Pacific littleneck clams (steamers)	Gallons	3.0000
Pacific littleneck clams (steamers)	Quarts	0.7500
Pacific littleneck clams (steamers)	Individual	0.2500
Razor clams	Gallons	3.0000
Razor clams	Individual	0.2500
Unknown clams	Individual	0.9050
Unknown clams	Gallons	3.0000
Unknown cockles	Gallons	3.0000
Unknown cockles	Quarts	0.7500
Unknown cockles	Individual	0.2500
Dungeness crab	Gallons	2.6400
Dungeness crab	Individual	0.7000
Dungeness crab [CF retention]	Individual	0.7000
Red king crab	Individual	5.3800
Red king crab [CF retention]	Individual	5.3800
Tanner crab	Individual	1.6000
Tanner crab [CF retention]	Individual	1.6000
Unknown crab	Individual	0.7039
Geoducks	Gallons	3.0000
Mussels	Quarts	0.3750
Mussels	Individual	0.0000
Mussels	Pounds	1.0000
Mussels	Gallons	1.5000
Octopus	Individual	4.0000
Octopus	Pounds	1.0000
Octopus [CF retention]	Gallons	4.0000
Octopus [CF retention]	Individual	4.0000
Scallops [CF retention]	Gallons	1.0000
Scallops [CF retention]	Individual	0.0000
Weathervane scallops	Gallons	1.6500
Sea cucumber	Quarts	0.5000

-continued-

Appendix D.–Page 5 of 7.

Resource name	Reported units	Conversion factor
Sea cucumber	Gallons	2.0000
Green sea urchin	Individual	0.0100
Green sea urchin	Gallons	2.0000
Green sea urchin	Quarts	8.0000
Unknown sea urchin	Pounds	1.0000
Unknown sea urchin	Gallons	0.5000
Shrimp	Pounds	1.0000
Shrimp	Individual	0.0250
Shrimp	Gallons	8.0000
Shrimp [CF retention]	Gallons	8.0000
Shrimp [CF retention]	Pounds	1.0000
Squid	Quarts	2.0000
Blueberry	Cups	0.2500
Blueberry	Gallons	4.0000
Blueberry	Quarts	1.0000
Lowbush cranberry	Cups	0.2500
Lowbush cranberry	Gallons	4.0000
Lowbush cranberry	Quarts	1.0000
Highbush cranberry	Cups	0.2500
Highbush cranberry	Gallons	4.0000
Highbush cranberry	Quarts	1.0000
Elderberry	Gallons	4.0000
Elderberry	Quarts	1.0000
Currants	Pints	0.5000
Currants	Cups	0.2500
Currants	Gallons	4.0000
Currants	Quarts	1.0000
Currants	Cups	0.2500
Huckleberry	Gallons	4.0000
Huckleberry	Quarts	1.0000
Huckleberry	Cups	0.2500
Nagoonberry	Pints	0.5000
Nagoonberry	Cups	0.2500
Nagoonberry	Gallons	4.0000
Nagoonberry	Quarts	1.0000
Raspberry	Pints	0.5000
Raspberry	Pounds	1.0000
Raspberry	5 Gallons	20.0000
Raspberry	Gallons	4.0000
Raspberry	Quarts	1.0000
Salmonberry	5 Gallons	20.0000
Salmonberry	Gallons	4.0000
Salmonberry	Quarts	1.0000
Salmonberry	Cups	0.2500
Salmonberry	Pounds	1.0000
Soapberry	Quarts	1.0000

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Resource name	Reported units	Conversion factor
Soapberry	Gallons	4.0000
Strawberry	Cups	0.2500
Strawberry	Gallons	4.0000
Strawberry	Quarts	1.0000
Dogwood berry	Gallons	4.0000
Twisted stalk berry (watermelon berry)	Gallons	4.0000
Twisted stalk berry (watermelon berry)	Quarts	8.0000
Other wild berry	Gallons	4.0000
Beach asparagus	Gallons	1.0000
Goose tongue	Gallons	1.0000
Wild rhubarb	Cups	0.0625
Wild rhubarb	Gallons	4.0000
Devil's club	Gallons	1.0000
Devil's club	Quarts	0.2500
Devil's club	Cups	0.0625
Fiddlehead ferns	Pints	0.1250
Fiddlehead ferns	Cups	0.0625
Fiddlehead ferns	Gallons	1.0000
Fiddlehead ferns	Quarts	0.2500
Nettle	Quarts	0.2500
Hudson's Bay (Labrador) tea	Pints	0.1250
Hudson's Bay (Labrador) tea	Gallons	1.0000
Hudson's Bay (Labrador) tea	Quarts	0.2500
Indian rice	Cups	0.0625
Indian rice	Gallons	1.0000
Indian rice	Quarts	1.0000
Mint	Quarts	0.2500
Mint	Gallons	1.0000
Nettle	Gallons	1.0000
Salmonberry shoots	Gallons	1.0000
Salmonberry shoots	Quarts	0.2500
Skunk cabbage	Gallons	1.0000
Sourdock	Gallons	1.0000
Spruce tips	Quarts	0.2500
Spruce tips	Cups	0.0625
Spruce tips	Pounds	1.0000
Spruce tips	Gallons	1.0000
Wild celery	Quarts	0.2500
Wild celery	Pints	0.1250
Wild celery	Cups	0.0625
Wild celery	Pounds	1.0000
Wild celery	Gallons	1.0000
Yarrow	Gallons	1.0000
Other wild greens	Gallons	1.0000
Unknown mushrooms	Individual	0.0100
Unknown mushrooms	Quarts	0.2500

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Appendix D.—Page 7 of 7.

Resource name	Reported units	Conversion factor
Unknown mushrooms	Pints	0.1250
Unknown mushrooms	Gallons	1.0000
Unknown mushrooms	Cups	0.0625
Fireweed	Gallons	1.0000
Chaga	Gallons	1.0000
Chaga	Cups	8.0000
Wild chives	Gallons	1.0000
Wild chives	Quarts	0.2500
Black seaweed	Cups	0.2500
Black seaweed	Gallons	4.0000
Black seaweed	Quarts	1.0000
Bull kelp	Gallons	4.0000
Bull kelp	Quarts	1.0000
Red seaweed	Cups	0.2500
Red seaweed	Gallons	4.0000
Sea ribbons	Gallons	4.0000
Sea ribbons	Cups	0.2500
Giant kelp	Cups	0.2500
Giant kelp	Gallons	4.0000
Alaria	Cups	0.2500
Alaria	Gallons	4.0000
Bladder wrack	Gallons	4.0000
Bladder wrack	Cups	0.2500
Seaweed/kelp used for fertilizer	Gallons	0.0000
Unknown seaweed	Gallons	4.0000
Wood	—	0.0000
Cottonwood	Pounds	0.0000
Cottonwood	Gallons	0.0000

*Source* ADF&G Division of Subsistence household surveys, 2016.

## **APPENDIX E—SUPPLEMENTAL TABLES**

*Appendix Table E-1.— Reported home heating expenses, Yakutat, 2015.*

Reported annual costs of home heating	Number of households	Percentage of responding households
\$0–\$2,500	47	54.0%
\$2,501–\$5,000	27	31.0%
\$5,001–\$7,500	7	8.0%
\$7,501–\$10,000	5	5.7%
\$10,000–\$12,500	1	1.1%
No response	14	13.9%

*Source* ADF&G Division of Subsistence household surveys, 2016.

*Appendix Table E-2.— Reported household grocery expenses, Yakutat, 2015.*

Average household monthly grocery costs	\$683
Per capita monthly grocery costs	\$277
Valid responses	88
No response	13

*Source* ADF&G Division of Subsistence household surveys, 2016.

*Appendix Table E-3.— Reasons households continue to reside in Yakutat, 2015.*

Reason	Households reporting	Percentage of sampled households reporting
It is home	24	23.8%
Family	12	11.9%
Sense of community	11	10.9%
Job	11	10.9%
The natural environment	8	7.9%
Subsistence lifestyle	7	6.9%
Quality of life	5	5.0%
Culture	4	4.0%
Subsistence foods	3	3.0%
Freedom	3	3.0%
Quiet/peaceful	2	2.0%
Safety	2	2.0%
Too difficult to move	2	2.0%
Like it here (no specific reason given)	2	2.0%
No response	4	4.0%
Do not know	1	1.0%

*Source* ADF&G Division of Subsistence household surveys, 2016.

*Appendix Table E-4.— Reported biggest challenge to living in Yakutat, 2015.*

Reason	Households reporting	Percentage of sampled households reporting
Expense	47	46.5%
Availability of goods	14	13.9%
Isolation	7	6.9%
None	7	6.9%
Weather	6	5.9%
Economy	5	5.0%
School district	3	3.0%
Other	3	3.0%
Health care	2	2.0%
Community/politics	2	2.0%
No response	4	4.0%
Do not know	1	1.0%

*Source* ADF&G Division of Subsistence household surveys, 2016.

Appendix Table E-5.— Individual participation in subsistence harvesting and processing activities, Yakutat, 2015.

<b>Total number of people</b>	<b>591.7</b>
<b>Fish</b>	
Fish	
Number	387.2
Percentage	65.4%
Process	
Number	445.0
Percentage	75.2%
<b>Large land mammals</b>	
Hunt	
Number	197.2
Percentage	33.3%
Process	
Number	274.2
Percentage	46.3%
<b>Small land mammals</b>	
Hunt or trap	
Number	81.8
Percentage	13.8%
Process	
Number	55.3
Percentage	9.3%
<b>Marine mammals</b>	
Hunt	
Number	64.9
Percentage	11.0%
Process	
Number	115.5
Percentage	19.5%
<b>Birds and eggs</b>	
Hunt/gather	
Number	115.5
Percentage	19.5%
Process	
Number	105.8
Percentage	17.9%
<b>Vegetation</b>	
Gather	
Number	483.4
Percentage	81.7%
Process	
Number	440.2
Percentage	74.4%
<b>Any resource</b>	
Attempt harvest	
Number	513.3
Percentage	86.7%
Process	
Number	503.8
Percentage	85.1%

Source: ADF&G Division of Subsistence household surveys, 2016.

## **APPENDIX F–SUMMARY**



# Yakutat

## Wild Resource Harvests in 2015

*In Yakutat, 101 surveyed households reported harvesting a variety of fish, wildlife, and plants. Expanding for 139 unsurveyed households, Yakutat's total estimated harvest was 154,977 lb ( $\pm 21\%$ ). Harvests averaged 646 lb per household and 262 lb per person.*

In January 2016, ADF&G Division of Subsistence and National Park Service staff conducted a comprehensive wild resources harvest survey in Yakutat. Residents who participated in the study answered detailed questions about their household's harvest and use of wild resources—including fish, wildlife, and plants and berries—during the 2015 calendar year. Households were asked whether they harvested wild resources and, if so, details about those harvests, such as how much they harvested, where, when, and whether they gave away or received resources from other households. Funding for the project came from the North Pacific Research Board and ADF&G with additional support from the National Park Service.

Ninety-nine percent of households in Yakutat used at least one kind of wild resource and 93% of households harvested a resource. Salmon and nonsalmon fish were the most widely used resource categories (by 94% of households), followed by vegetation (91%), large land mammals (81%), marine invertebrates (71%), marine mammals (50%), birds and eggs (41%), and small land mammals (16%). Figure 1 shows the top 10 species harvested by usable weight.

Figure 2 shows the estimated usable pounds harvested by category. Fish dominated the harvest with 82,590 lb harvested; about 66% of the fish harvest was salmon, the remainder was nonsalmon fish species (Table 1). Land mammals (large and small) contributed the next greatest amount with 29,256 lb harvested, followed by marine mammals and vegetation with 19,295 lb and 14,553 lb harvested, respectively. Marine invertebrates added 6,926 lb

to the harvest and, lastly, birds and eggs contributed 2,357 lb to the overall estimated harvest.

Survey respondents were also asked to show on a map where they searched for the wild resources they harvested in 2015 (Figure 3). While much effort was concentrated on areas close to Yakutat, such as the Situk River, Yakutat residents searched for and harvested wild resources over a large area of land and water stretching from Dry Bay to the Tsiu River area.

While most households in Yakutat participated in the harvest of wild resources, sharing among households was also prevalent. Eighty-seven percent of households gave away some of their harvest while 97% of households received wild resources from other households. These high rates of exchange emphasize the importance of sharing and the cooperative nature of wild resource harvesting activities in Yakutat.

This survey was conducted by the Division of Subsistence of the Alaska Department of Fish and Game in collaboration with Wrangell-St. Elias National Park and Preserve and the Yakutat Tlingit Tribe. Local researchers were Charlotte Demmert, Lorena Williams, Will Fraker, Ray Sensmeier, Adam Williams, Ralph Johnson, and Joe Valle.

### Source for this information

Sill, L. A., J. T. Ream, and M. Cunningham. 2017. *Harvest and Use of Wild Resources in Yakutat, Alaska, 2015*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 432, Douglas.

### Electronic copy of this report

<http://www.adfg.alaska.gov/techpap/TP432.pdf>

### Community Subsistence Information System (CSIS)

<http://www.subsistence.adfg.state.ak.us/CSIS>

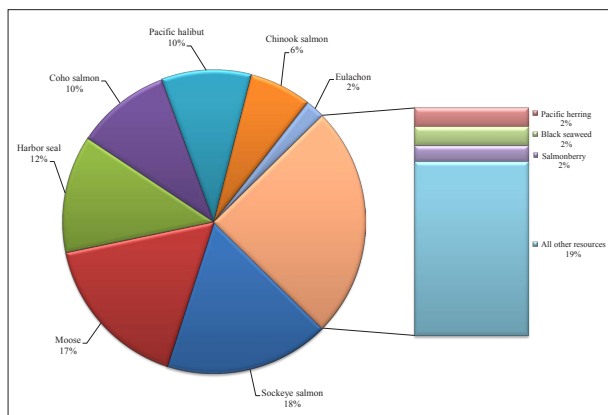


Figure 1.—Top wild resources harvested, 2015.

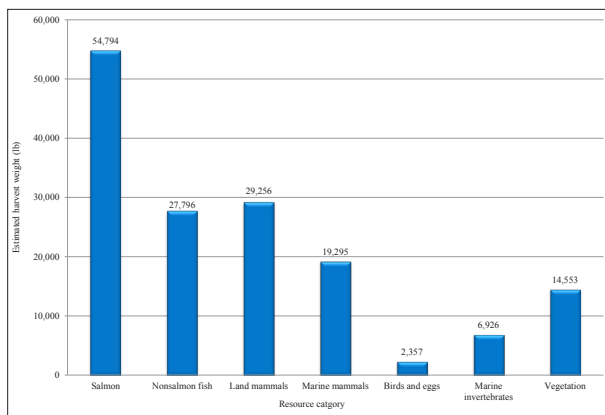


Figure 2.—Estimated pounds harvested by category, 2015.

Table 1.—Estimated harvests of wild resources, Yakutat, 2015.

Resource	Percentage of households <sup>a</sup>		Estimated pounds harvested			Total estimated amount harvested by community <sup>b</sup>	95% confidence limit (±) harvest	
	Using	Harvesting	Total for community	Average per household	Average per person			
<b>Fish</b>								
Chum salmon	3.0	3.0	505.8	2.1	0.9	80.8 ind	±	133.4
Coho salmon	64.4	52.5	15,438.1	64.3	26.1	3,500.7 ind	±	31.1
Chinook salmon	79.2	48.5	10,086.0	42.0	17.0	1,392.5 ind	±	30.3
Pink salmon	19.8	16.8	1,406.5	5.9	2.4	501.7 ind	±	48.1
Sockeye salmon	83.2	62.4	27,077.8	112.8	45.8	8,392.6 ind	±	26.0
Unknown salmon	2.0	1.0	280.2	1.2	0.5	71.3 ind	±	151.0
Pacific herring	11.9	7.9	3,150.9	13.1	5.3	525.1 gal	±	114.6
Pacific herring roe	47.5	10.8	2,065.0	8.6	3.5	503.3 gal	±	89.0
Eulachon (hooligan, candlefish)	44.6	21.8	3,168.7	13.2	5.4	528.1 gal	±	40.8
Pacific (gray) cod	6.9	2.0	15.2	0.1	0.0	4.8 ind	±	75.5
Unknown flounder	1.0	1.0	4.8	0.0	0.0	1.6 ind	±	151.0
Lingcod	21.8	14.9	760.4	3.2	1.3	190.1 ind	±	55.5
Rock greenling	2.0	1.0	9.5	0.0	0.0	9.5 ind	±	151.0
Pacific halibut	90.1	49.5	16,214.6	67.6	27.4	16,214.6 lb	±	25.8
Rockfishes	21.7	13.8	1,489.9	6.2	2.5	762.0 ind	±	63.1
Sablefish (black cod)	14.9	5.0	414.4	1.7	0.7	133.7 ind	±	92.6
Dolly Varden	7.9	6.9	193.0	0.8	0.3	137.8 ind	±	85.4
Cutthroat trout	10.9	8.9	193.0	0.8	0.3	137.8 ind	±	62.4
Rainbow trout	2.0	2.0	29.9	0.1	0.1	21.4 ind	±	135.1
Steelhead	5.9	5.9	86.5	0.4	0.1	61.8 ind	±	74.6
Subtotal, fish	98.0	80.1	82,590.1	344.1	139.6	82,590.1 lb	±	19.1
<b>Land mammals</b>								
Black bear	13.9	6.9	964.8	4.0	1.6	16.6 ind	±	55.3
Brown bear	1.0	1.0	335.0	1.4	0.6	2.4 ind	±	151.0
Deer	44.6	8.9	1,437.1	6.0	2.4	33.3 ind	±	59.4
Moose	75.2	19.8	25,663.4	106.9	43.4	47.5 ind	±	30.4
Beaver	3.0	2.0	207.9	0.9	0.4	23.8 ind	±	124.2
Snowshoe hare	11.9	11.9	628.8	2.6	1.1	314.4 ind	±	70.0
Red (tree) squirrel	1.0	1.0	19.0	0.1	0.0	38.0 ind	±	151.0
Subtotal, land mammals	81.1	33.6	29,256.0	121.9	49.4	29,256.0 lb	±	28.5
<b>Marine mammals</b>								
Harbor seal	44.6	13.9	19,295.0	80.4	32.6	344.6 ind	±	84.6
Subtotal, marine mammals	49.5	17.8	19,295.0	80.4	32.6	19,295.0 lb	±	84.6
<b>Birds and eggs</b>								
Ducks	24.7	14.8	1,073.2	4.5	1.8	1,073.2 lb	±	61.6
Geese	11.8	6.9	623.1	2.5	1.1	623.0 lb	±	109.0
Sandhill crane	8.9	3.0	428.2	1.8	0.7	80.8 ind	±	133.6
Other birds	3.9	3.9	131.0	0.5	0.2	130.4 lb	±	101.0
Bird eggs	19.8	9.9	101.9	0.5	0.2	101.8 lb	±	57.6
Subtotal, birds and eggs	40.6	22.8	2,357.4	9.8	4.0	2,357.4 lb	±	81.5
<b>Marine invertebrates</b>								
Black (small) chitons	15.8	12.9	311.8	1.3	0.5	78.0 gal	±	60.8
Clams	32.6	26.7	1,272.4	5.3	2.1	422.5 gal	±	39.4
Unknown cockles	26.7	21.8	510.9	2.1	0.9	170.3 gal	±	38.8
Dungeness crab	52.5	23.8	1,512.0	6.3	2.6	2,160.0 ind	±	44.1
Tanner crab	5.0	1.0	15.2	0.1	0.0	9.5 ind	±	151.0
Mussels	6.9	6.9	27.3	0.1	0.0	18.2 gal	±	85.5
Octopus	23.8	13.9	917.2	3.8	1.6	229.3 ind	±	59.0
Sea cucumber	2.0	1.0	47.5	0.2	0.1	23.8 gal	±	151.0
Sea urchin	4.9	3.9	194.3	0.8	0.3	127.1 gal	±	147.7
Shrimp	31.7	12.9	2,117.2	8.8	3.6	2,117.2 lb	±	56.4
Subtotal, marine invertebrates	71.3	44.6	6,925.9	28.9	11.7	6,925.9 lb	±	31.1
<b>Vegetation</b>								
Berries	84.1	78.2	8,381.4	34.9	14.2	8,381.3 lb	±	22.6
Plants, greens, and mushrooms	52.4	46.5	514.3	2.1	0.8	514.2 lb	±	46.2
Seaweed/kelp	56.4	32.6	5,657.2	23.6	9.6	5,657.2 lb	±	42.8
Subtotal, vegetation	91.1	80.2	14,552.9	60.6	24.6	14,552.9 lb	±	23.4
All resources	99.0	93.1	154,977.3	645.7	261.9	154,977.3 lb	±	21.2

Source ADF&G Division of Subsistence household surveys, 2016.

a. Listed are selected resources for which there was a harvest for use as food. For the subtotal values for resource categories, the percentages of households using and harvesting are based on all resources, including those resources received and used and those resources harvested but not used as food.

b. The harvest amount for subtotal rows is converted to the unit "pounds" to avoid tally conflicts if there are incompatible units of measure among resources in the category.



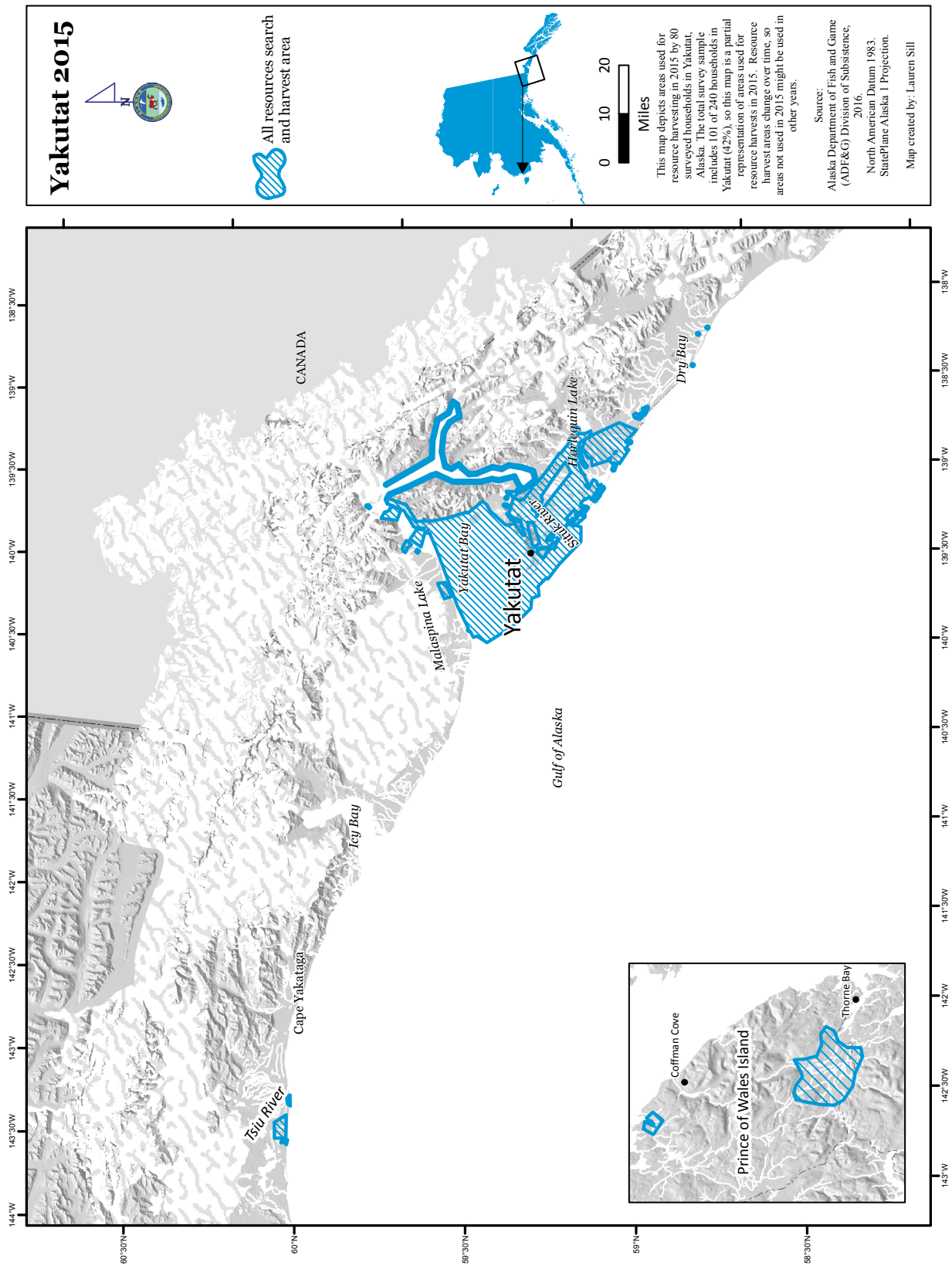


Figure 3.—Wild resources search areas and harvest locations, Yakutat, 2015.

## Wild Resource Harvests in Southeast Alaska, 2012/2013 and 2015

Recent comprehensive estimates of the harvest of wild resources are available for 7 Southeast Alaska communities. In these communities, the average wild resource harvests provided approximately 268 lb usable weight per person during the 2012–2015 study years. This compares to an average for 2014 of 189 lb per person for all of rural Southeast Alaska and 275 lb per person for all of rural Alaska.<sup>1</sup>

1. Fall, J. A. 2016. *Subsistence in Alaska: A Year 2014 Update*. Alaska Department of Fish and Game Division of Subsistence. [http://www.adfg.alaska.gov/static/home/subsistence/pdfs/subsistence\\_update\\_2014.pdf](http://www.adfg.alaska.gov/static/home/subsistence/pdfs/subsistence_update_2014.pdf)

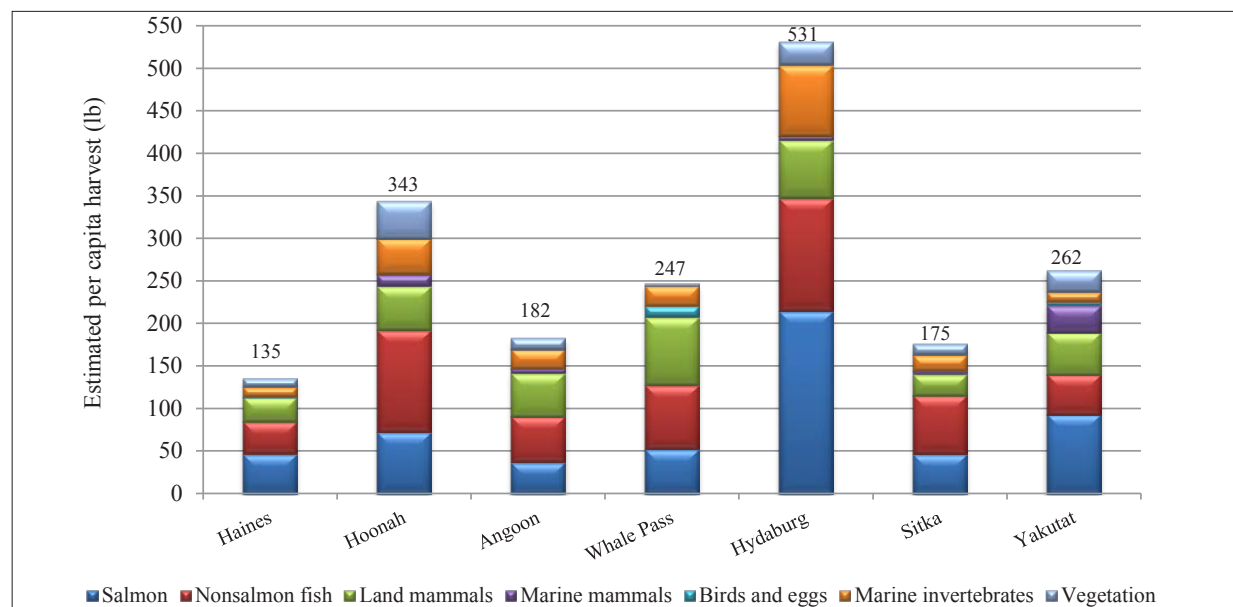



Figure 4.— Estimated wild resources harvested, usable pounds per person, 7 Southeast Alaska communities, 2012/2013, 2015.

The use of wild resources remains an important component of community life in Southeast Alaska. Comprehensive harvest estimates for 5 Southeast communities were completed for the 2012 study year with an additional community (Sitka) updated in 2013. The primary data gathering method for each of these communities was a systematic household survey that collected quantitative and qualitative harvest information, including mapping harvest areas. In Yakutat, researchers also engaged in participant observation, conducted in-depth key respondent interviews, and gauged community perceptions on a variety of subsistence and management topics. These additional methods were employed to fulfill objectives of the study concerning the resilience and adaptive capacity of Yakutat as perceived through the lens of the subsistence way of life. Results of these lines of inquiry will be available in a forthcoming final report to North Pacific Research Board (Project No. 1519) and a peer-reviewed journal article. Figure 4 shows the harvest of wild resources in each community as estimated in pounds usable weight per person. Harvests of wild resources ranged from 135 lb per person in Haines to 531 lb per person in Hydaburg. For Yakutat, Haines, and Hydaburg, salmon was the top resource category harvested in terms of the per capita harvests. For Angoon,

Hoonah, and Sitka, nonsalmon fish was the top harvested resource category, while large land mammals composed the largest percentage of the harvest in Whale Pass. These harvest patterns mirror historical patterns of a heavy reliance on the marine environment. Yakutat, being located in an area of the state where residents have access to moose, deer, bear, and—to a lesser extent—goat, show a greater proportion of their harvest from these land mammals. Marine mammal hunting remains a strong component of the subsistence way of life in Yakutat, harvests of which dwarf harvests in the other recently surveyed Southeast Alaska communities. Residents of these Southeast Alaska communities mainly used the lands and waters in the vicinity of their respective communities for harvesting wild resources. While it is difficult to compare existing harvest and use area maps that depict multiple years of harvest to this study and its single year of focus for mapping harvest and use areas, it appears, from speaking with residents and comments made during surveys, that the harvest areas have generally decreased in size. Area residents provided numerous reasons for changes to their harvest areas, including the price of gas, changes in economic opportunities, competition for resources, and changes in distributions of resource populations.



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